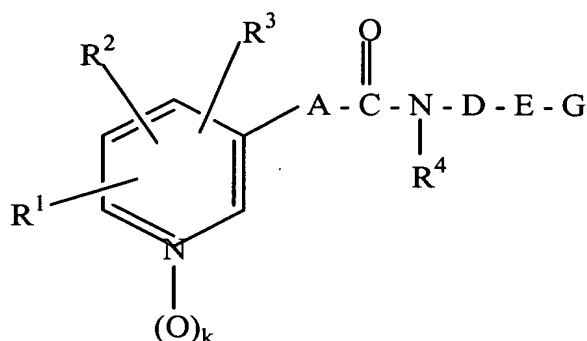


**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of the claims in the application.

**Listing of Claims:**

2. (currently amended) Pyridylalkane, pyridylalkene and pyridylalkine carboxamides of formula (I)



(I)

wherein:

$R^1$  is selected from the group consisting of hydrogen, halogen, cyano,  $C_1-C_6$ -alkyl,  $C_3-C_6$ -alkenyl,  $C_2-C_6$ -alkinyl, trifluoromethyl,  $C_3-C_8$ -cycloalkyl,  $C_1-C_6$ -hydroxyalkyl, hydroxy,  $C_1-C_6$ -alkoxy,  $C_3-C_6$ -alkenyloxy,  $C_3-C_6$ -alkinyloxy, benzyloxy,  $C_1-C_7$ -alkanoyloxy,  $C_2-C_7$ -alkoxycarbonyloxy,  $C_1-C_6$ -alkylthio,  $C_3-C_6$ -alkenylthio,  $C_3-C_6$ -alkinylthio,  $C_3-C_8$ -cycloalkyloxy,  $C_3-C_8$ -cycloalkylthio,  $C_2-C_7$ -alkoxycarbonyl, aminocarbonyl,  $C_2-C_7$ -alkylaminocarbonyl,  $C_3-C_{13}$ -dialkylaminocarbonyl, carboxy, phenyl, phenoxy, phenylthio, pyridyloxy, pyridylthio, and  $NR^5R^6$ , wherein

R<sup>5</sup> and R<sup>6</sup> are selected independently of each other from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, benzyl and phenyl;

R<sup>2</sup> is selected from the group consisting of hydrogen, halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy, benzyloxy and C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy;

~~R<sup>7</sup> and R<sup>8</sup>, if adjacent, may form a bridge selected from -(CH<sub>2</sub>)<sub>4</sub>- and -(CH=CH)<sub>2</sub>- or CH<sub>2</sub>O-CR<sup>7</sup>R<sup>8</sup>-O-, wherein R<sup>7</sup> and R<sup>8</sup> are selected independently from each other from hydrogen and C<sub>1</sub>-C<sub>6</sub>-alkyl;~~

R<sup>3</sup> is selected from the group consisting of hydrogen, halogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl and C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl;

R<sup>4</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy and benzyloxy;

k is 0 or 1,

A is selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylene,

a substituted C<sub>1</sub>-C<sub>6</sub>-alkylene which is substituted one to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, or fluorine, ~~or phenyl,~~

C<sub>2</sub>-C<sub>6</sub>-alkylene, in which a methylene unit is isosterically replaced by O, S, NR<sup>9</sup>, CO, SO or SO<sub>2</sub>, wherein, with the exception of CO, the isosteric substitution is not adjacent to

the amide group and R<sup>9</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>1</sub>-C<sub>6</sub>-acyl and C<sub>1</sub>-C<sub>6</sub>-alkanesulfonyl,

~~1,2-cyclopropylene,~~

C<sub>2</sub>-C<sub>6</sub>-alkenylene,

a substituted C<sub>2</sub>-C<sub>6</sub>-alkenylene which is substituted once to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, fluorine, or ~~cyano-or-phenyl~~,

C<sub>4</sub>-C<sub>6</sub>-alkadienylene,

a substituted C<sub>4</sub>-C<sub>6</sub>-alkadienylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, or ~~cyano-or-phenyl~~;

1,3,5-hexatrienylene,

a 1,3,5-hexatrienylene which is substituted by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, or ~~cyano-or-phenyl~~, and

ethynylene,

D is selected from the group consisting of C<sub>2</sub>-C<sub>10</sub>-alkylene,

a substituted C<sub>2</sub>-C<sub>10</sub>-alkylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

C<sub>4</sub>-C<sub>10</sub>-alkenylene,

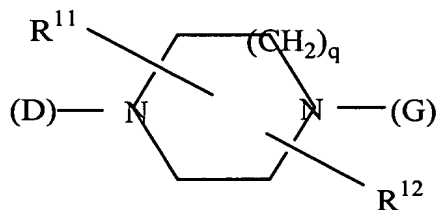
a substituted  $C_4$ - $C_{10}$ -alkenylene which is substituted once or twice by  $C_1$ - $C_6$ -alkyl, hydroxy, or  $C_1$ - $C_6$ -alkoxy;

$C_4$ - $C_{10}$ -alkynylene,

a substituted  $C_4$ - $C_{10}$ -alkynylene which is substituted once or twice by  $C_1$ - $C_6$ -alkyl, hydroxy, or  $C_1$ - $C_6$ -alkoxy; and

$C_2$ - $C_{10}$ -alkylene,  $C_4$ - $C_{10}$ -alkenylene or  $C_4$ - $C_{10}$ -alkynylene, in which one to three methylene units are isosterically replaced by O, S,  $NR^{10}$ , CO, SO, or  $SO_2$ , wherein  $R^{10}$  has the same meaning as  $R^9$ , but is selected independently thereof;

E is



wherein

q is ~~1, 2, or 3~~;

$R^{11}$  is selected from the group consisting of hydrogen  $C_1$ - $C_6$ -alkyl, hydroxy, hydroxymethyl, carboxy, or  $C_2$ - $C_7$ -alkoxycarbonyl,

$R^{12}$  is selected from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl and an oxo group adjacent to a nitrogen atom,

and wherein  $R^{11}$  and  $R^{12}$  may together form a  $C_1$ - $C_3$ -alkylene

bridge under formation of a bicyclic ring system;

G is ~~selected from the group consisting of G1, G2, G3, G4, and G5, wherein~~

$G^1$  is  $-(CH_2)_r-(CR^{14}R^{15})_s-R^{13}$

r is 0, 1, 2 or 3,

s is 0 or 1,

$R^{13}$  is selected from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_3$ - $C_6$ -alkinyl,  $C_3$ - $C_8$ -cycloalkyl,

saturated or unsaturated four to eight-membered heterocycles which contain one or two hetero-atoms selected from the group consisting of N, S and O,

benzyl, phenyl,

monocyclic aromatic five or six-membered heterocycles which contain one to three hetero-atoms selected from the group consisting of N, S and O where the heterocycles are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage may occur either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially

hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O and the linkage may occur either over an aromatic ring or a hydrogenated ring and either directly or over a methylene group,

$R^{14}$  has the same meaning as  $R^{13}$ , but is selected independently thereof;

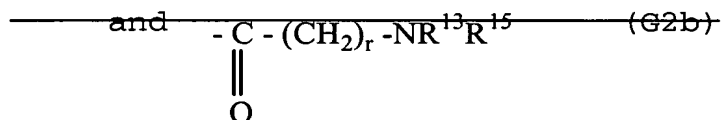
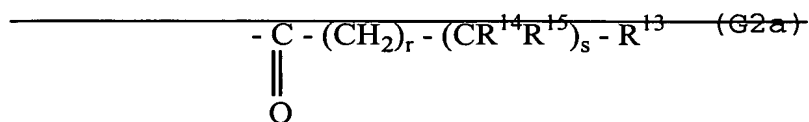
$R^{15}$  is selected from the group consisting of hydrogen, hydroxy, methyl, benzyl, and phenyl,

monocyclic aromatic five or six-member heterocycles, which contain one to three hetero-atoms selected from the group consisting of N, S and O and wherein the heterocycles are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O and the linkage occurs either over an aromatic ring or a hydrogenated ring and either directly or over a methylene group,

~~G<sup>2</sup> is selected from the group consisting of~~



~~wherein r, s and the substituents R<sup>13</sup> to R<sup>15</sup> can have the above meaning, or the group -NR<sup>13</sup>R<sup>15</sup> is a nitrogen containing heterocycle,~~

~~wherein -NR<sup>13</sup>R<sup>15</sup> is a nitrogen containing heterocycle bound over the nitrogen atom selected from the group consisting of~~

~~saturated or unsaturated monocyclic, four to eight membered nitrogen-containing heterocycles,~~

~~saturated or unsaturated monocyclic, four to eight membered nitrogen-containing heterocycles which, aside from the essential nitrogen atom, contain one or two further hetero-atoms selected from the group consisting of N, S and O,~~

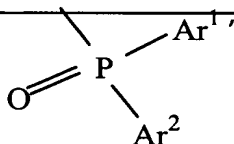
~~saturated or unsaturated bi- or tricyclic anellated or bridged nitrogen-containing heterocycles with 8 to 16 ring atoms,~~

~~saturated or unsaturated bi- or tricyclic anellated or bridged nitrogen-containing heterocycles with 8 to 16 ring atoms which aside from the essential nitrogen atom, contain one or two further hetero-atoms that are selected from N, S and O,~~

~~—G<sup>3</sup> is —SO<sub>2</sub>—(CH<sub>2</sub>)<sub>r</sub>—R<sup>13</sup>~~

~~wherein r and R<sup>13</sup> have the above meanings,~~

~~—G<sup>4</sup> is —~~



~~—wherein~~

~~—Ar<sup>1</sup> and Ar<sup>2</sup> are selected independently from each other from the group consisting of phenyl, pyridyl and naphthyl,~~

~~—G<sup>5</sup> is —COR<sup>16</sup>~~

~~—R<sup>16</sup> is selected from the group consisting of trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>3</sub>-C<sub>6</sub> alkenyloxy, and benzyloxy,~~

wherein G is not —(CH<sub>2</sub>)<sub>r</sub>—(CR<sup>14</sup>R<sup>15</sup>)<sub>s</sub>—R<sup>13</sup> when

R<sup>13</sup> represents pyridyl or phenyl, which may be substituted by halogen, alkyl, alkoxy or trifluoromethyl,

R<sup>14</sup> represents hydrogen or phenyl, which may be substituted by halogen, alkyl, alkoxy or trifluoromethyl,

R<sup>15</sup> represents hydrogen,

A represents alkylene, substituted ethenylene or butadienylene,

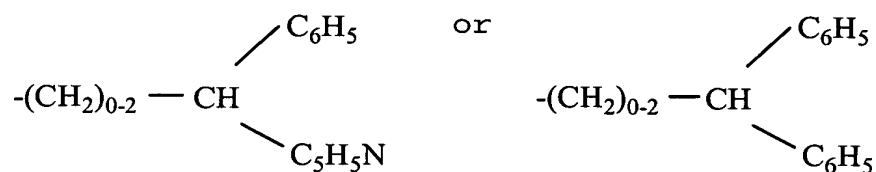
D represents alkylene or alkenylene,

E represents piperazine or homopiperazine, and

s is 1;

wherein G is not phenyl, N-containing heteroaryl, —CH<sub>2</sub>)<sub>0-2</sub>—CH<sub>2</sub>—C<sub>6</sub>H<sub>5</sub>, —(CH<sub>2</sub>)<sub>0-2</sub>—CH<sub>2</sub>—C<sub>5</sub>H<sub>5</sub>N,



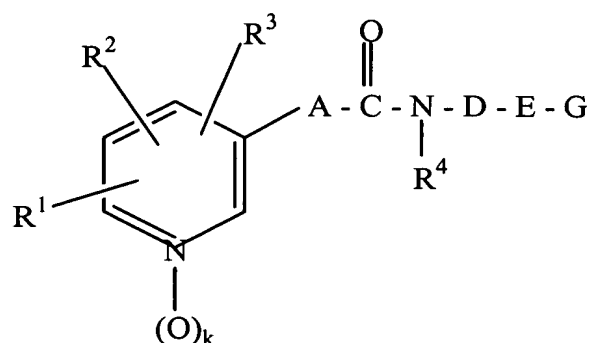


wherein the phenyl group or moiety may be substituted by one or two members selected from the group consisting of halogen, a C<sub>1</sub>-C<sub>6</sub> alkyl, trifluoromethyl and a C<sub>1</sub>-C<sub>6</sub> alkoxy,

when

- R<sup>1</sup> is hydrogen, a halogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl, a C<sub>1</sub>-C<sub>6</sub>-alkoxy, a C<sub>1</sub>-C<sub>6</sub>-alkylthio, a C<sub>3</sub>-C<sub>8</sub>-cycloalkyloxy, a C<sub>3</sub>-C<sub>8</sub>-cycloalkylthio, a C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, carboxy, a phenyl, a phenoxy, a phenylthio, 3-pyridyloxy or 3-pyridylthio;
- R<sup>2</sup> is hydrogen, a hydroxy, a C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy or a C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyloxy, or when R<sup>1</sup> and R<sub>2</sub> are adjacent to each other, they may combine to form tetramethylene or -CH<sub>2</sub>OCR<sup>8a</sup>R<sup>9a</sup>O-, wherein R<sup>8a</sup> and R<sup>9a</sup> are the same or different and are each a C<sub>1</sub>-C<sub>6</sub>-alkyl;
- R<sup>3</sup> is hydrogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl or a hydroxy-C<sub>1</sub>-C<sub>6</sub>-alkyl;
- A is a C<sub>1</sub>-C<sub>6</sub>-alkylene or -(CR<sup>6a</sup>=CR<sup>7a</sup>)ra-, wherein R<sup>6a</sup> is hydrogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl or a phenyl, R<sup>7a</sup> is hydrogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl, cyano or a phenyl, and ra is 1 or 2;
- R<sup>4</sup> is hydrogen;
- D is a C<sub>1</sub>-C<sub>10</sub>-alkylene or a C<sub>4</sub>-C<sub>10</sub>-alkylene interrupted by at least one double bond; and
- E is selected from the group consisting of piperazine, piperazine, which is substituted by C<sub>1</sub>-C<sub>6</sub>-alkyl, homopiperazine, and homopiperazine, which is substituted by C<sub>1</sub>-C<sub>6</sub>-alkyl.

3. (Currently amended) A compound according to formula (I)



(I)

wherein

$R^1$  is selected from the group consisting of hydrogen, halogen, cyano,  $C_1$ - $C_6$ -alkyl, trifluoromethyl,  $C_3$ - $C_8$ -cycloalkyl,  $C_1$ - $C_6$ -hydroxyalkyl, hydroxy,  $C_1$ - $C_4$ -alkoxy, benzyloxy,  $C_1$ - $C_4$ -alkylthio,  $C_1$ - $C_5$ -alkanoyloxy,  $C_1$ - $C_4$ -alkylthio,  $C_2$ - $C_5$ -alkoxycarbonyl, aminocarbonyl,  $C_2$ - $C_5$ -alkylaminocarbonyl,  $C_3$ - $C_9$ -dialkylaminocarbonyl, carboxy, phenyl, phenoxy, phenylthio, pyridyloxy, and  $NR^5R^6$ , wherein

$R^5$  and  $R^6$  are selected independently of each other from hydrogen and  $C_1$ - $C_6$ -alkyl;

$R^2$  is selected from the group consisting of hydrogen, halogen, cyano,  $C_1$ - $C_6$ -alkyl, trifluoromethyl, hydroxy, and  $C_1$ - $C_4$ -alkoxy;

$R^3$  is selected from the group consisting of hydrogen,

halogen and C<sub>1</sub>-C<sub>6</sub>-alkyl;

R<sup>4</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy and benzyloxy;

k is 0 or 1,

A is selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylene,

a substituted C<sub>1</sub>-C<sub>6</sub>-alkylene which is substituted one to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, or fluorine, ~~or phenyl~~,

C<sub>2</sub>-C<sub>6</sub>-alkylene, in which a methylene unit is isosterically replaced by O, S, NR<sup>9</sup>, CO, SO or SO<sub>2</sub>, wherein, with the exception of CO, the isosteric substitution is not adjacent to the amide group and, the residue R<sup>9</sup>, is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-acyl and methane sulfonyl;

~~1,2-cyclopropylene,~~

C<sub>2</sub>-C<sub>6</sub>-alkenylene,

a substituted C<sub>2</sub>-C<sub>6</sub>-alkenylene which is substituted once to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, fluorine, or cyano ~~or phenyl~~,

C<sub>4</sub>-C<sub>6</sub>-alkadienylene,

a substituted C<sub>4</sub>-C<sub>6</sub>-alkadienylene which is substituted once to twice by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, or cyano ~~or phenyl~~;

1,3,5-hexatrienylene,

a substituted 1,3,5-hexatrienylene which is substituted by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, cyano, and

ethinylene,

D is selected from the group consisting of C<sub>2</sub>-C<sub>10</sub>-alkylene,

a substituted C<sub>2</sub>-C<sub>10</sub>-alkylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl or hydroxy;

C<sub>4</sub>-C<sub>10</sub>-alkenylene,

a substituted C<sub>4</sub>-C<sub>10</sub>-alkenylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl or hydroxy;

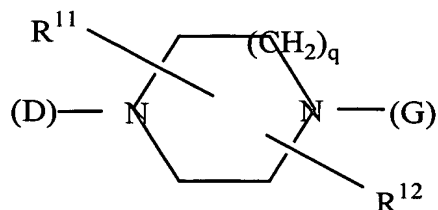
C<sub>4</sub>-C<sub>10</sub>-alkinylene,

a substituted C<sub>4</sub>-C<sub>10</sub>-alkinylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl or hydroxy; and

C<sub>2</sub>-C<sub>10</sub>-alkylene, C<sub>4</sub>-C<sub>10</sub>-alkenylene or C<sub>4</sub>-C<sub>10</sub>-alkinylene, wherein one to three methylene units are isosterically replaced by O, S, NR<sup>10</sup>, CO, SO, or SO<sub>2</sub>, wherein

R<sup>10</sup> has the same meaning as R<sup>9</sup>, but is selected independently thereof;

E is



wherein

$q$  is ~~1, 2, or 3~~;

$R^{11}$  is selected from the group consisting of hydrogen  $C_1$ - $C_3$ -alkyl, hydroxy, hydroxymethyl, carboxy, and  $C_2$ - $C_7$ -alkoxycarbonyl and

$R^{12}$  is selected from the group consisting of hydrogen, and an oxo group adjacent to a nitrogen atom,

and wherein  $R^{11}$  and  $R^{12}$  may together form a  $C_1$ - $C_3$ -alkylene bridge under formation of a bicyclic ring system;

~~$G$  is selected from the group consisting of  $G^1$ ,  $G^2$ ,  $G^3$ ,  $G^4$ , and  $G^5$ , wherein~~

$G^1$  is  $-(CH_2)_r-(CR^{14}R^{15})_s-R^{13}$

$r$  is 0, 1 or 2,

$s$  is 0 or 1,

$R^{13}$  is selected from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_3$ - $C_6$ -alkinyl,  $C_3$ - $C_8$ -cycloalkyl; benzyl, phenyl;

monocyclic aromatic five or six-membered heterocycles, which contain one to three hetero-atoms selected from the group consisting of N, S and O, wherein the heterocycles are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O, wherein the linkage occurs either over an aromatic ring or a hydrogenated ring and either directly or over a methylene group,

R<sup>14</sup> has the same meaning as R<sup>13</sup>, but is selected independently thereof;

R<sup>15</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, benzyl, phenyl,

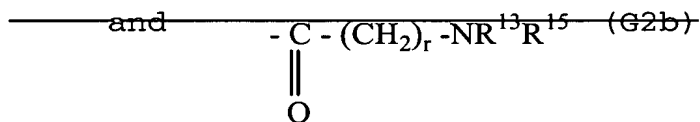
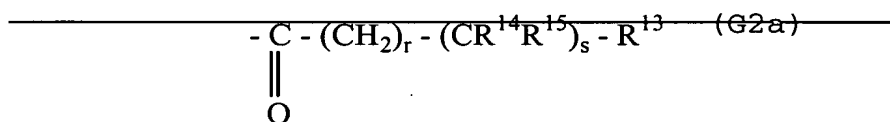
monocyclic aromatic five or six-membered heterocycles, which contain one to three hetero-atoms selected from the group consisting of N, S and O, wherein the heterocycles are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms

and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group, and

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms can be selected from N, S and O and the linkage may occur either over an aromatic ring or a hydrogenated ring and either directly or over a methylene group;

~~— G<sup>2</sup> is selected from the group consisting of —~~



~~— wherein r, s and the substituents R<sup>13</sup> to R<sup>15</sup> can have the above meaning, or the group —NR<sup>13</sup>R<sup>15</sup> is a nitrogen-containing heterocycle,~~

~~— wherein —NR<sup>13</sup>R<sup>15</sup> is a nitrogen-containing heterocycle bound over the nitrogen atom, the nitrogen-containing heterocycle selected from the group consisting of~~

~~— saturated or unsaturated monocyclic, four to eight-membered heterocycles which aside from the essential nitrogen atom, contain one or two further hetero-atoms selected from the group consisting of N, S and O,~~

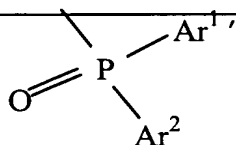
~~— saturated or unsaturated bi- or tricyclic anellated or bridged heterocycles with 8 to 16 ring atoms, and~~

~~— saturated or unsaturated bi- or tricyclic anellated or bridged heterocycles with 8 to 16 ring atoms that aside from the essential nitrogen atom, contain one or two further heteroatoms that are selected from the group consisting of N, S and O,~~

~~— G<sup>3</sup> is SO<sub>2</sub>-(CH<sub>2</sub>)<sub>r</sub>-R<sup>13</sup>~~

~~wherein r and R<sup>13</sup> have the above meaning,~~

~~— G<sup>4</sup> is~~



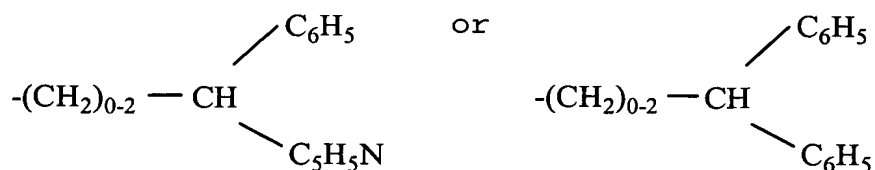
~~— wherein~~

~~— Ar<sup>1</sup> and Ar<sup>2</sup> are be selected independently from each other from the group consisting of phenyl, pyridyl and naphthyl,~~

~~— G<sup>5</sup> is COR<sup>16</sup>~~

~~— R<sup>16</sup> is selected from the group consisting of trifluoromethyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>3</sub>-C<sub>6</sub>-alkenyloxy, and benzyloxy, wherein G is not phenyl, N-containing heteroaryl, - (CH<sub>2</sub>)<sub>0-2</sub>-CH<sub>2</sub>-C<sub>6</sub>H<sub>5</sub>, - (CH<sub>2</sub>)<sub>0-2</sub>-CH<sub>2</sub>-C<sub>5</sub>H<sub>5</sub>N,~~





wherein the phenyl group or moiety may be substituted by one or two members selected from the group consisting of halogen, a C<sub>1</sub>-C<sub>6</sub> alkyl, trifluoromethyl and a C<sub>1</sub>-C<sub>6</sub> alkoxy,

when

- R<sup>1</sup> is hydrogen, a halogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl, a C<sub>1</sub>-C<sub>6</sub>-alkoxy, a C<sub>1</sub>-C<sub>6</sub>-alkylthio, a C<sub>3</sub>-C<sub>8</sub>-cycloalkyloxy, a C<sub>3</sub>-C<sub>8</sub>-cycloalkylthio, a C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, carboxy, a phenyl, a phenoxy, a phenylthio, 3-pyridyloxy or 3-pyridylthio;
- R<sup>2</sup> is hydrogen, a hydroxy, a C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy or a C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyloxy, or when R<sup>1</sup> and R<sub>2</sub> are adjacent to each other, they may combine to form tetramethylene or -CH<sub>2</sub>OCR<sup>8a</sup>R<sup>9a</sup>O-, wherein R<sup>8a</sup> and R<sup>9a</sup> are the same or different and are each a C<sub>1</sub>-C<sub>6</sub>-alkyl;
- R<sup>3</sup> is hydrogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl or a hydroxy-C<sub>1</sub>-C<sub>6</sub>-alkyl;
- A is a C<sub>1</sub>-C<sub>6</sub>-alkylene or -(CR<sup>6a</sup>=CR<sup>7a</sup>)ra-, wherein R<sup>6a</sup> is hydrogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl or a phenyl, R<sup>7a</sup> is hydrogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl, cyano or a phenyl, and ra is 1 or 2;
- R<sup>4</sup> is hydrogen;
- D is a C<sub>1</sub>-C<sub>10</sub>-alkylene or a C<sub>4</sub>-C<sub>10</sub>-alkylene interrupted by at least one double bond; and
- E is selected from the group consisting of piperazine, piperazine, which is substituted by C<sub>1</sub>-C<sub>6</sub>-alkyl, homopiperazine, and homopiperazine, which is substituted by C<sub>1</sub>-C<sub>6</sub>-alkyl.

4. (Currently amended) The compound according to claim 3, wherein

R<sup>1</sup> is selected from the group consisting of hydrogen, halogen, cyano, methyl, ethyl, trifluoromethyl, hydroxy, C<sub>1</sub>-C<sub>4</sub>-alkoxy, benzyloxy, C<sub>1</sub>-C<sub>5</sub>-alkanoyloxy, methylthio, ethylthio, methoxycarbonyl, tert-butoxycarbonyl, aminocarbonyl, carboxy, phenoxy, and phenylthio,

R<sup>2</sup> is selected from the group consisting of hydrogen, halogen, trifluoromethyl and hydroxy;

R<sup>3</sup> is selected from the group consisting of hydrogen and halogen;

R<sup>4</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>3</sub>-alkyl, allyl, hydroxy and C<sub>1</sub>-C<sub>5</sub>-alkoxy;

k is 0 or 1,

A is selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylene,

a substituted C<sub>1</sub>-C<sub>6</sub>-alkylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy or fluorine;

C<sub>2</sub>-C<sub>6</sub>-alkylene, in which a methylene unit is isosterically replaced by O, S, NR<sup>9</sup>, CO, SO or SO<sub>2</sub>, wherein, with the exception of CO, the isosteric substitution is not adjacent to the amide group,

C<sub>2</sub>-C<sub>6</sub>-alkenylene,

a substituted C<sub>2</sub>-C<sub>6</sub>-alkenylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy or fluorine,

C<sub>4</sub>-C<sub>6</sub>-alkadienylene,

a substituted C<sub>4</sub>-C<sub>6</sub>-alkadienylene which is substituted by C<sub>1</sub>-C<sub>3</sub>-alkyl or one or two fluorine atoms;

1,3,5-hexatrienylene,

a substituted 1,3,5-hexatrienylene which is substituted by fluorine,

D is selected from the group consisting of C<sub>2</sub>-C<sub>8</sub>-alkylene,

a substituted C<sub>2</sub>-C<sub>8</sub>-alkylene which is substituted once or twice by methyl or hydroxy;

C<sub>4</sub>-C<sub>8</sub>-alkenylene,

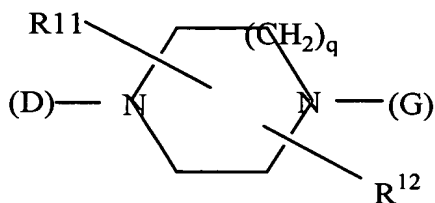
a substituted C<sub>4</sub>-C<sub>8</sub>-alkenylene which is substituted once or twice by methyl or hydroxy,

C<sub>4</sub>-C<sub>8</sub>-alkynylene,

a substituted C<sub>4</sub>-C<sub>8</sub>-alkynylene which is substituted once or twice by methyl or hydroxy; and

C<sub>2</sub>-C<sub>8</sub>-alkylene, C<sub>4</sub>-C<sub>8</sub>-alkenylene or C<sub>4</sub>-C<sub>8</sub>-alkynylene, wherein one to three methylene units are each isosterically replaced by O, S, NH, N(CH<sub>3</sub>), N(COCH<sub>3</sub>), N(SO<sub>2</sub>CH<sub>3</sub>), CO, SO or SO<sub>2</sub>,

E is



wherein

~~q is 1 or 2;~~

$R^{11}$  is selected from the group consisting of hydrogen  $C_1$ - $C_3$ -alkyl, hydroxymethyl, and carboxy,

$R^{12}$  is selected from the group consisting of hydrogen and an oxo group adjacent to a nitrogen atom,

~~G is selected from the group consisting of G1, G2, G3, G4, and G5, wherein~~

$G^1$  represents  $-(CH_2)_r-(CR^{14}R^{15})_s-R^{13}$ ,

$r$  is 0, 1 or 2,

$s$  is 0 or 1;

$R^{13}$  is selected from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_8$ -cycloalkyl; benzyl, phenyl, benzcyclobutyl, indanyl, indenyl oxoindanyl, naphthyl, dihydronaphthyl, tetrahydronaphthyl, oxotetrahydronaphthyl, biphenylenyl, fluorenyl, oxofluorenyl, anthryl, dihydroanthryl, oxodihydroanthryl, dioxodihydroanthryl, phenanthryl,

dihydrophenanthryl, oxodihydrophenanthryl,  
dibenzocycloheptenyl, oxodibenzocycloheptenyl,  
dihydrodibenzocycloheptenyl, oxodihydrodibenzocycloheptenyl,  
dihydrodibenzocyclooctenyl, tetrahydrodibenzocyclooctenyl,  
oxotetrahydrodibenzocyclooctenyl bound directly over a  
methylene group,

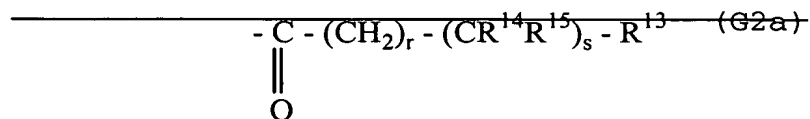
furyl, thienyl, pyrrolyl, oxazolyl, isoxazolyl, thizolyl, iso-  
thiazolyl, pyrazolyl, imidazolyl, oxadiazolyl, thiadiazolyl,  
triazolyl, pyridyl, pyrazinyl, pyridazinyl, pyrimidinyl,  
triazinyl, imidazothiazolyl, benzofuryl, dihydrobenzofuryl,  
benzothienyl, dihydrobenzothienyl, indolyl, indolinyl,  
isoindolinyl, oxoindolinyl, dioxoindolinyl, benzoxazolyl,  
oxobenzoaxolinyl, benzooisoxazolyl, oxobenzoisoxazolinyl,  
benzothiazolyl, oxobenzthiazolinyl, benzoisothiazolyl,  
oxobenzoisothiazolinyl, benzoimidazolyl, oxobenzoimidazolinyl,  
indazolyl, oxoindazolinyl, benzofurazanyl, benzothiadiazolyl,  
benzotriazolyl, oxazolopridyl, oxodihydrooxazolopyridyl,  
thiazolopyridyl, oxodihydrooxazolopyridyl, thiazolopyridyl,  
oxodihydrothiazolopyridyl, isothiazolopyridyl, imidazopyridyl,  
oxodihydroimidazopyridyl, pyrazolopyridyl,  
oxodihydropyrazolopyridyl, thienopyrimidinyl, chromanyl,  
chromanonyl, benzopyranyl, chromonyl, quinoloyl, isoquinoloyl,  
dihydroquinolyl, oxodihydroquinolinyl, tetrahydroquinolyl,  
oxotetrahydroquinolinyl, benzodioxanyl, quinoxalinyll,  
quinazolinyl, naphthyridinyl, carbazolyl,  
tetrahydrocarbazolyl, acridinyl, oxodihydroacridinyl,  
phenanthridinyl, dihydrophenanthridinyl,  
oxodihydrophenanthridinyl, dibenzoisoquinolinyl,  
dihydrodibenzoisoquinolinyl, oxodihydrodibenzoisoquinolinyl,  
phenothiazinyl, dihydrodibenzooxepinyl,  
oxodihydrodibenzooxepinyl, benzocycloheptathienyl,

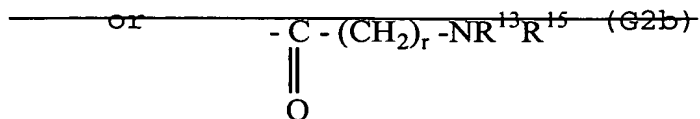
oxobenzocycloheptathienyl, dihydrothienobenzothiepinyl, oxodihydrothienobenzothiepinyl, dihydrothienobenzothiepinyl, oxodihydrodibenzothiepinyl, octahydrodibenzothiepinyl, dibenzoazepinyl, dihydrodibenzoazepinyl, oxodihydrodibenzoazepinyl, octahydrodibenzoazepinyl, benzocycloheptapyridyl, oxobenzocycloheptapyridyl, pyridobenzazepinyl, dihydropyridobenzazepinyl, oxodihydropyridobenzazepinyl, dihydropyridobenzodiazepinyl, dihydrodibenzooxazepinyl, dihydropyridobenzooxepinyl, dihydropyridobenzooxazepinyl, oxodihydropyridobenzooxazepinyl, dihydropyridobenzothiazepinyl and oxodihydropyridobenzothiazepinyl bound directly or over a methylene group;

$R^{14}$  has the same meaning as  $R^{13}$ , but is selected independently thereof;

$R^{15}$  is selected from the group consisting of hydroxy, methyl, benzyl, phenyl, indanyl, indenyl, naphthyl, dihydronaphthyl, tetrahydronaphthyl, furyl, thienyl, pyrrolyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyrazolyl, imidazolyl, imidazolyl, oxadiazolyl, thiadiazolyl, triazolyl, pyridyl, pyrazinyl, pyridazinyl, pyrimidinyl, triazinyl, benzofuryl, benzothienyl, indolyl, indolinyl, benzooxazolyl, benzothiazolyl, benzoimidazolyl, chromanyl, quinolyl, and tetrahydroquinolyl bound directly or over a methylene group;

~~$G^2$  is selected from the group consisting of~~





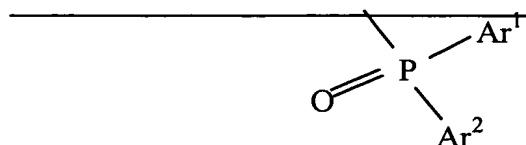
~~wherein r, s and the substituents R<sup>13</sup> to R<sup>15</sup> have the above meaning, or the group NR<sup>13</sup>R<sup>15</sup> is selected from the group consisting of azetidine, pyrrolidine, piperidine, (1H)-tetrahydropyridine, hexahydroazepine, (1H)-tetrahydroazepine, octahydroazocine, pyrazolidine, piperazine, hexahydrodiazepine, morpholine, hexahydrooxazepine, thiomorpholine, thiomorpholin-1,1-dioxide, of 5-aza-bicyclo[2.1.1]hexane, 2-aza-bicyclo[2.2.1]heptane, 7-aza-bicyclo[2.2.1]heptane, 2,5-diaza-bicyclo[2.2.1]heptane, 2-aza-bicyclo[2.2.2]octane, 8-aza-bicyclo[3.2.1]octane, 2,5-diazabicyclo[2.2.2]octane, 9-aza-bicyclo[3.3.1]nonane, indoline, isoindoline, (1H)-dihydroquinoline, (1H)-tetrahydroquinolin, (2H)-tetrahydroisoquinoline, (1H)-tetrahydroquinoxaline, (4H)-dihydrobenzooxazine, (4H)-dihydrobenzothiazine, (1H)-tetrahydrobenzo[b]azepine, (1H)-tetrahydrobenzo[c]azepine, (1H)-tetrahydrobenzo[d]azepine, (5H)-tetrahydrobenzo[b]oxazepine, (5H)-tetrahydrobenzo[b]thiazepine, 1, 2, 3, 4-tetrahydro-9H-pyrido[3,4-b]indole, (10H)-dihydroacridine, (10H)-dihydrophenanthridine, 1, 2, 3, 4-tetrahydroacridanone, (10H)-phenoxazine, (10H)-phenothiazine, (5H)-dibenzoazepine, (5H)-dihydrodibenzoazepine, (5H)-octahydrodibenzoazepine, dihydrobenzo[d,e]isoquinoline, (5H)-dihydrodibenzodiazepine, (5H)-benzo[b]pyrido-[f]azepine, (5H)-Dihydrobenzo[b]pyrido[f]azepine, (11H)-Dihydrodibenzo[b,e]oxazepine, (11H)-dihydrodibenzo[b,e]thiazepine, (10H)-dihydrodibenzo[b,f]-oxazepine, (10H)-dihydrodibenzo[b,f]thiazepine, (5H)-tetrahydrodibenzoazocine, (11H)-dihydrobenzo[e]pyrido[b]-1,4-diazepin-6-one and (11H)-dihydrobenzo[b]pyrido[e]-1,4-~~

~~diazepin-5-one,~~

~~—G<sup>3</sup> is —SO<sub>2</sub>—(CH<sub>2</sub>)<sub>r</sub>—R<sup>13</sup>~~

~~wherein r and R<sup>13</sup> have the above definition,~~

~~—G<sup>4</sup> is~~



~~wherein~~

~~—Ar<sup>1</sup> and Ar<sup>2</sup> are selected independently from each other from the group consisting of phenyl, pyridyl and naphthyl,~~

~~—G<sup>5</sup> is —COR<sup>16</sup>~~

~~—R<sup>16</sup> is selected from the group consisting of trifluoromethyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>3</sub>-C<sub>6</sub>-alkenyloxy, and benzyloxy.~~

5. (Previously amended) The compounds according to claim 4, wherein

R<sup>1</sup> is selected from the group consisting of hydrogen, fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, hydroxy, C<sub>1</sub>-C<sub>4</sub>-alkoxy, methylthio, ethylthio, carboxy and phenoxy;

R<sup>2</sup> is selected from the group consisting of hydrogen, chlorine and methyl;



R<sup>3</sup> is selected from hydrogen;

R<sup>4</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>3</sub>-alkyl and hydroxy,

k is 0,

A is selected from the group consisting of  
C<sub>2</sub>-C<sub>6</sub>-alkylene,

a substituted C<sub>2</sub>-C<sub>6</sub>-alkylene which is substituted once or twice by hydroxy or fluorine,

C<sub>2</sub>-C<sub>6</sub>-alkylene, wherein a methylene unit is isosterically replaced by O, S or CO, wherein, with the exception of CO, the isosteric substitution cannot be adjacent to the amide group,

C<sub>2</sub>-C<sub>6</sub>-alkenylene,

a C<sub>2</sub>-C<sub>6</sub>-alkenylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl or fluorine, and

C<sub>4</sub>-C<sub>6</sub>-alkadienylene;

D is selected from the group consisting of  
C<sub>2</sub>-C<sub>8</sub>-alkylene,

a substituted C<sub>2</sub>-C<sub>8</sub>-alkylene which is substituted by methyl or hydroxy;

C<sub>4</sub>-C<sub>8</sub>-alkenylene,

a substituted C<sub>4</sub>-C<sub>8</sub>-alkenylene which is substituted by

hydroxy;

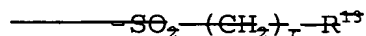
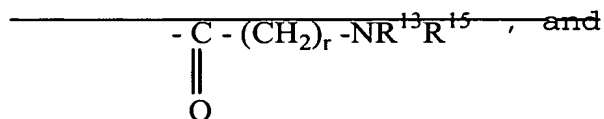
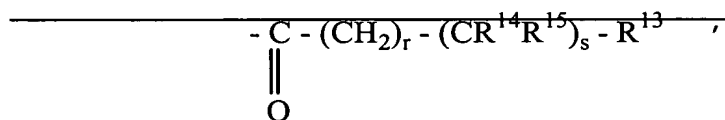
C<sub>4</sub>-C<sub>8</sub>-alkynylene,

a substituted C<sub>4</sub>-C<sub>8</sub>-alkynylene which is substituted by hydroxy; and

C<sub>2</sub>-C<sub>8</sub>-alkylene, C<sub>4</sub>-C<sub>8</sub>-alkenylene or C<sub>4</sub>-C<sub>8</sub>-alkynylene, wherein a methylene unit is isosterically replaced by O, S, NH, N(CH<sub>3</sub>), CO, or SO<sub>2</sub>, or an ethylene group is isosterically replaced by a group NH-CO or CO-NH, or a propylene group is isosterically replaced by a group NH-CO-O or O-CO-NH;

E is selected from the group consisting of piperazine, hexahydro-1,4-diazepine, and substituted piperazine and hexahydro-1,4-diazepine wherein the ring is substituted by one or two methylene groups or by an oxo group adjacent to a nitrogen atom;

G is selected from the group consisting of hydrogen, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl, methoxycarbonyl, tert-butoxycarbonyl, benzyloxycarbonyl, trifluoroacetyl, diphenyl phosphinoyl, and - (CH<sub>2</sub>)<sub>r</sub> - (CR<sup>14</sup>R<sup>15</sup>)<sub>s</sub> - R<sup>13</sup>,



r is 0 or 1,

s is 0 or 1,

R<sup>13</sup> is selected from the group consisting of hydrogen, methyl, benzyl, phenyl, indanyl, indenyl, oxoindanyl, naphthyl, tetrahydronaphthyl, fluorenyl, oxofluorenyl, anthryl, dihydroanthryl, oxodihydroanthryl, dioxodihydroanthryl, phenanthryl, dihydrophenanthryl, oxodihydrophenanthryl, dibenzocycloheptenyl, dihydrodibenzocycloheptenyl, oxodihydrodibenzocycloheptenyl, bound directly over a methylene group, furyl, thienyl, oxazolyl, thiazolyl, imidazolyl, oxadiazolyl, pyridyl, pyrazinyl, pyrimidinyl, imidazothiazolyl, benzofuryl, benzothienyl, indolyl, indolinyl, oxoindolinyl, dioxoindolinyl, benzoxazolyl, oxobenzoaxolinyl, benzooisoxazolyl, oxobenzoisoxazolinyl, benzothiazolyl, oxobenzthiazolinyl, benzimidazolyl, oxobenzimidazolinyl, indazolyl, benzofurazanyl, benzothiadiaazolyl, oxazolopridyl, oxodihydrooxazolopyridyl, imidazopyridyl, oxodihydroimidazopyridyl, chromanyl, chromanonyl, benzopyranyl, chromonyl, quinoloyl, isoquinoloyl, oxodihydroquinolinyl, tetrahydroquinolyl, oxotetrahydroquinolinyl, benzodioxanyl, quinazolinyl, carbazolyl, acridinyl, dihydroacridinyl, oxodihydroacridinyl, dibenzoisoquinolinyl, dihydrodibenzoisoquinolinyl, oxodihydrodibenzoisoquinolinyl, phenothiazinyl, dihydrodibenzooxepinyl, oxodihydrodibenzooxepinyl, benzocycloheptathienyl, oxobenzocycloheptathienyl, dihydrothienobenzothiepinyl, oxodihydrothienobenzothiepinyl, dihydrothienobenzothiepinyl, oxodihydrodibenzothiepinyl, octahydrodibenzothiepinyl, dibenzoazepinyl,

dihydrodibenzoazepinyl, oxodihydrodibenzoazepinyl, ocathydrodibenzoazepinyl, benzocycloheptapyridyl, oxobenzocycloheptapyridyl, pyridobenzoazepinyl, dihydropyridobenzoazepinyl, oxodihydropyridobenzoazepinyl, dihydropyridobenzodiazepinyl, dihydrodibenzooxazepinyl, dihydropyridobenzooxepinyl, dihydropyridobenzooxazepinyl, oxodihydropyridobenzooxazepinyl, dihydropyridobenzothiazepinyl, and oxodihydropyridobenzothiazepinyl bound directly or over a methylene group,

R<sup>14</sup> is selected from the group consisting of hydrogen, methyl, benzyl, and phenyl;

R<sup>15</sup> is selected from the group consisting of hydroxy, methyl, benzyl, phenyl, naphthyl, tetrahydronaphthyl, furyl, thienyl, oxazolyl, thiazolyl, imidazolyl, benzofuryl, benzothienyl, indolyl, indolinyl, benzoxazolyl, benzothiazolyl, benzoimidazolyl, chromanyl, quinolyl, and tetrahydroquinolyl bound directly or over a methylene group;

wherein the group -NR<sup>13</sup>R<sup>15</sup> represents a ring bound over the nitrogen of a residue from the series pyrrolidine, piperidine, hexahydroazepine, piperazine, hexahydrodiazepine, thiomorpholine, 7-aza-bicyclo-heptane, 2,5-diaza-bicyclo heptane, indoline, isoindoline, (1H)-dihydroquinoline, (1H)-tetrahydroquinolin, (2H)-tetrahydroisoquinoline, (4H)-dihydrobenzooxazine, (4H)-dihydrobenzothiazine, (1H)-tetrahydrobenzoazepine, (1H)-tetrahydrobenzoazepine, (5H)-tetrahydrobenzoox-azepine, (5H)-tetrahydrobenzothiazepine, (10H)-dihydroacridine, 1,2,3,4-tetrahydroacridanone, (10H)-dihydrophenanthridine, (1H)-dihyrdobenzo-isoquinoline, (10H)-phenothiazine, (5H)-dibenzoazepine, (5H)-

dihydrodibenzoazepine, (5H)-octahydrodibenzoazepine, dihydrobenzoisoquinoline, (5H)-dihydrodibenzoazepine, (5H)-dihydrodibenzodiazepine, (5H)-dihydrobenzoazepine, (11H)-dihydrodibenzooxazepine, (11H)-dihydrodibenzothiazepine, (10H)-dihydrodibenzo-oxazepine, (5H)-dihydrobenzopyridoazepine and (11H)-oxodihydrobenzopyridodiazepine, wherein

aromatic ring systems in the substituents may be substituted independently from each other by one to three of the same or different groups selected from the group consisting of halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl, phenyl, benzyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy entirely or partially substituted by fluorine, benzyloxy, phenoxy, mercapto, C<sub>1</sub>-C<sub>6</sub>-alkylthio, carboxy, C<sub>2</sub>-C<sub>7</sub>-carboxyalkyl, C<sub>2</sub>-C<sub>7</sub>-carboxyalkenyl, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, benzyloxycarbonyl, nitro, amino, mono-C<sub>1</sub>-C<sub>6</sub>-alkylamino, di-(C<sub>1</sub>-C<sub>6</sub>-alkyl)-amino and, methylene dioxide in the case of two adjacent residues on the aromatic ring, and

wherein alkyl- alkenyl- and cycloalkyl residues in the groups G can be substituted by one or two of the same or different groups which are selected from the group consisting of hydroxy, carboxy, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, benzyloxycarbonyl, amino, mono-C<sub>1</sub>-C<sub>6</sub>-alkylamino and di-(C<sub>1</sub>-C<sub>6</sub>-alkyl-amino).

6. (Currently amended) The compounds according to claim 5, wherein

R<sup>1</sup> is selected from the group consisting of hydrogen, fluorine, methyl, trifluoromethyl, and ethylthio;

R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup> are each hydrogen;

k is 0,

A is selected from the group consisting of ethylene, propylene and butylene,

a substituted ethylene, propylene and butylene which are each substituted by hydroxy, one or two fluorine atoms,

OCH<sub>2</sub>,

SCH<sub>2</sub>,

ethenylene, and

1,3-butadienylene;

D is selected from the group consisting of C<sub>2</sub>-C<sub>6</sub>-alkylene,

a substituted C<sub>2</sub>-C<sub>6</sub>-alkylene which is substituted by hydroxy,

C<sub>4</sub>-C<sub>6</sub>-alkenylene,

C<sub>4</sub>-C<sub>6</sub>-alkynylene, and

C<sub>2</sub>-C<sub>6</sub>-alkylene, C<sub>4</sub>-C<sub>6</sub>-alkenylene or C<sub>4</sub>-C<sub>6</sub>-alkynylene, wherein one or two methylene units are isosterically replaced by O, NH, CO, or SO<sub>2</sub>,

E is piperazine or hexahydro-1,4-diazeazepine<sub>7,1</sub>

~~G is selected from the group consisting of phenyl, benzyl, phenethyl, diphenylmethyl, naphthyl, tetrahydroaphtyl, naphthylmethyl, fluorenyl, fluorenylmethyl, anthrylmethyl,~~

~~dihydrodibenzo-cycloheptenyl, furylmethyl, thienylmethyl, thiazolylmethyl, pyridylmethyl, benzothienylmethyl, quinolylmethyl, phenylthienylmethyl, phenylpyridylmethyl, benzocycloheptapyridinyl, dihydrobenzocyclo-heptapyridinyl, dihydrodibenzooxepinyl, dihydrodibenzothiepinyl, dihydrodibenzoazepinyl, dihydrobenzopyridodiazepinyl formyl, acetyl, pivaloyl, phenylacetyl, diphenylacetyl, diphenylpropionyl, naphthylacetyl, benzoyl, naphthoyl, oxofluorenylcarbonyl, oxodihydroanthrylcarbonyl, dioxodihydroanthrylcarbonyl, furoyl, pyridylacetyl, pyridylcarbonyl, chromonylcarbonyl, quinolylcarbonyl, phenylaminocarbonyl, naphthylaminocarbonyl, tetrahydronaphthylaminocarbonyl, dibenzylaminocarbonyl, benzylphenylaminocarbonyl, diphenylaminocarbonyl, indolinyl-N-carbonyl, isoindolin-N-carbonyl, tetrahydroquinolinyl-N-carbonyl, carbazoyl-N-carbonyl, tetrahydrobenzoazepinyl-N-carbonyl, dihydrodibenzoazepin-N-carbonyl, dihydrobenzopyridoazepinyl-N-carbonyl, oxodihydrobenzopyridoazepinyl-N-carbonyl, methanesulfonyl, toluenesulfonyl, naphthylsulfonyl, quinolinsulfonyl and diphenylphosphinoyl,~~

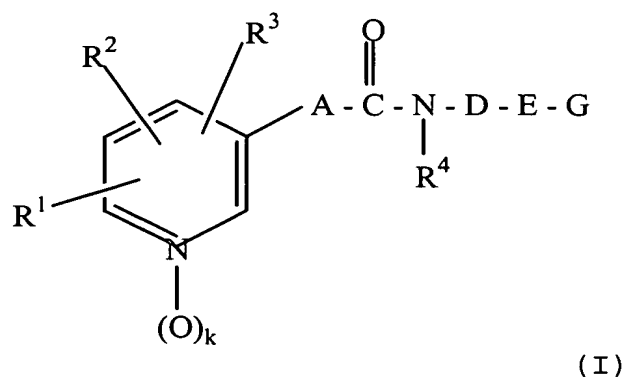
7. (Previously presented) The compound according to claim 3 which is selected from the group consisting of N-[4-(4-diphenylmethylpiperazin-1-yl)-3-hydroxybutyl]-3-pyridin-3-yl-acrylamide; N-[3-(4-diphenylmethylpiperazin-1-yl)-propoxy]-3-pyridin-3-yl-acrylamide; N-[4-(4-diphenylmethylpiperazin-1-yl)-4-oxo-butyl]-3-pyridin-3-yl-acrylamide; N-[3-(4-diphenylmethylpiperazin-1-sulfonyl)-propyl]-3-pyridin-3-yl-acrylamide; N-{2-[2-(4-diphenylmethylpiperazin-1-yl)-ethoxy]-ethyl}-3-pyridin-3-yl-acrylamide; N-(4-{4-[bis-(4-fluorophenyl)-methyl]-piperazin-1-yl}-but-2-in-yl)-3-pyridin-

3-yl-acrylamide; N-{4-[4-(4-carboxyphenyl-phenylmethyl)-piperazin-1-yl]-butyl}-3-pyridin-3-yl-acrylamide; N-(4-{4-[(4-aminophenyl)-phenylmethyl]-piperazin-1-yl}-butyl)-3-pyridin-3-yl-acrylamide; N-{4-[4-(9H-fluoren-9-yl)-piperazin-1-yl]-butyl}-2-(pyridin-3-yloxy)-acetamide; N-{5-[4-(9H-fluoren-9-yl)-piperazin-1-yl]-penyl}-3-pyridin-3-yl-acrylamide; N-{6-[4-(9H-fluoren-9-yl)-piperazin-1-yl]-hexyl}-3-pyridin-3-yl-acrylamide; 3-pyridin-3-yl-N-{4-[4-(1,2,3,4-tetrahydronaphthalin-1-yl)-piperazin-1-yl]-butyl}-acrylamide; 3-pyridin-3-yl-N-{4-[4-(5,6,7,8-tetrahydronaphthalin-1-yl)-piperazin-1-yl]-butyl}-acrylamide; N-{4-[4-(naphthalin-1-yl)-piperazin-1-yl]-butyl}-3-pyridin-3-yl-acrylamide; N-[4-(4-biphenyl-2-yl)-butyl]-3-pyridin-3-yl-propionamide; N-[5-(4-biphenyl-2-yl-piperazin-1-yl)-pentyl]-3-pyridin-3-yl-acrylamide; N-[6-(4-biphenyl-2-yl-piperazin-1-yl)-hexyl]-3-pyridin-3-yl-acrylamide; N-[4-(4-biphenyl-2-yl-piperazin-1-yl)-butyl]-2-(pyridin-3-yloxy)-acetamide; N-[4-(4-biphenyl-2-yl-piperazin-1-yl)-butyl]-5-(pyridin-3-yl)-penta-2,4-dienoic acid amide; N-{4-[4-(10,11-dihydro-5H-dibenzo[a,d]cyclohepten-5-yl)-piperazin-1-yl]-butyl}-3-pyridin-3-yl-propionamide; N-{5-[4-(10,11-dihydro-5H-dibenzo[a,d]cyclohepten-5-yl)-piperazin-1-yl]-pentyl}-3-pyridin-3-yl-acrylamide; N-{6-[4-(10,11-dihydro-5H-dibenzo[a,d]cyclohepten-5-yl)-piperazin-1-yl]-hexyl}-3-pyridin-3-yl-propionamide; N-{4-[4-(10,11-dihydro-5H-dibenzo[a,d]cyclohepten-5-yl)-piperazin-1-yl]-butyl}-5-(pyridin-3-yl)-penta-2,4-dienoic acid amide; N-{4-[4-(6,11-dihydro-dibenzo[b,e]oxepin-11-yl)-piperazin-1-yl]-butyl}-3-pyridin-3-yl-propionamide; N-{2-[4-(6,11-dihydrodibenzo[b,e]thiepin-11-yl)-piperazin-1-yl]-ethyl}-3-pyridin-3-yl-acrylamide; N-[4-(4-diphenylacetyl-piperazin-1-yl)-butyl]-3-pyridin-3-yl-acrylamide; N-[4-(4-benzoylpiperazin-1-yl)-butyl]-3-pyridin-3-yl-acrylamide; N-{4-

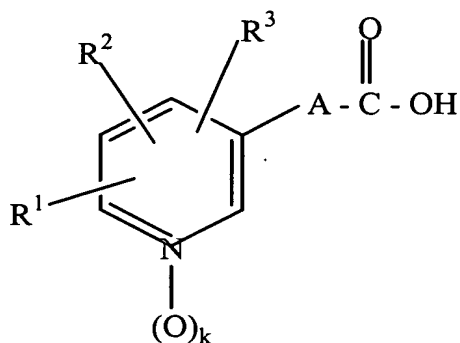


[4-(2-aminobenzoyl)-piperazin-1-yl]-butyl}-3-pyridin-3-yl-acrylamide; N-{4-[4-(4-carboxybenzoyl)-piperazin-1-yl]-butyl}-3-pyridin-3-yl-acrylamide; N-{4-[4-(biphenyl-2-carbonyl)-piperazin-1-yl]-butyl}-3-pyridin-3-yl-acrylamide; N-{4-[4-(9-oxo-9H-fluoren-4-carbonyl)-piperazin-1-yl]-butyl}-3-pyridin-3-yl-acrylamide; N-{4-[4-(furan-2-carbonyl)-piperazin-1-yl]-butyl}-3-pyridin-3-yl-acrylamide; N-{4-[4-(naphthalin-1-yl-aminocarbonyl)-piperazin-1-yl]-butyl}-3-pyridin-3-yl-propionamide; N-{4-[4-(diphenylaminocarbonyl)-piperazin-1-yl]-butyl}-3-pyridin-3-yl-acrylamide; N-{4-[4-(naphthalin-2-sulfonyl)-piperazin-1-yl]-butyl}-3-pyridin-3-yl-acrylamide; N-[4-(4-diphenylphosphinoyl-piperazin-1-yl)-butyl]-3-pyridin-3-yl-acrylamide; N-[4-(4-biphenyl-2-yl-piperazin-1-yl)-butyl]-3-pyridin-3-yl-acrylamide; N-{4-[4-(9H-fluoren-9-yl)-piperazin-1-yl]-butyl}-3-pyridin-3-yl-acrylamide; and N-{4-[4-(10,11-dihydro-5H-dibenzo[a,d]cyclohepten-5-yl)-piperazin-1-yl]-butyl}-3-pyridin-3-yl-acrylamide.

8. (Currently amended) A method for the production of compounds according to formula (I)

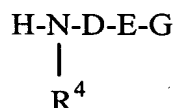


[(A))] wherein carboxylic acids of formula (II)



(I)

in which  $R^1$ ,  $R^2$ ,  $R^3$ ,  $A$  and  $k$  have the meaning given below or their respective derivatives are reacted with compounds of formula (III)



wherein  $D$ ,  $E$ , and  $G$  and  $R^4$  are defined below in a form of the respective free base or the respective free acid addition salt at a temperature between about  $-40^\circ\text{C}$  and about  $180^\circ\text{C}$  wherein:

$R^1$  is selected from the group consisting of hydrogen, halogen, cyano,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_2$ - $C_6$ -alkinyl, trifluoromethyl,  $C_3$ - $C_8$ -cycloalkyl,  $C_1$ - $C_6$ -hydroxyalkyl, hydroxy,  $C_1$ - $C_6$ -alkoxy,  $C_3$ - $C_6$ -alkenyloxy,  $C_3$ - $C_6$ -alkinyloxy, benzyloxy,  $C_1$ - $C_7$ -alkanoyloxy,  $C_2$ - $C_7$ -alkoxycarbonyloxy,  $C_1$ - $C_6$ -alkylthio,  $C_3$ - $C_6$ -alkenylthio,  $C_3$ - $C_6$ -alkinylthio,  $C_3$ - $C_8$ -cycloalkyloxy,  $C_3$ - $C_8$ -cycloalkylthio,  $C_2$ - $C_7$ -alkoxycarbonyl, aminocarbonyl,  $C_2$ - $C_7$ -alkylaminocarbonyl,  $C_3$ - $C_{13}$ -dialkylaminocarbonyl, carboxy, phenyl, phenoxy, phenylthio, pyridyloxy, pyridylthio, and  $NR^5R^6$ , wherein

$R^5$  and  $R^6$  are selected independently of each other from

the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, benzyl and phenyl;

R<sup>2</sup> is selected from the group consisting of hydrogen, halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy, benzyloxy and C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy;

R<sup>1</sup> and R<sup>2</sup>, if adjacent, may form a bridge selected from - (CH<sub>2</sub>)<sub>4</sub>- and - (CH=CH)<sub>2</sub>- or CH<sub>2</sub>O-CR<sup>7</sup>R<sup>8</sup>-O-, wherein R<sup>7</sup> and R<sup>8</sup> are selected independently from each other from hydrogen and C<sub>1</sub>-C<sub>6</sub>-alkyl;

R<sup>3</sup> is selected from the group consisting of hydrogen, halogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl and C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl;

R<sup>4</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy and benzyloxy;

k is 0 or 1,

A is selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylene,

a substituted C<sub>1</sub>-C<sub>6</sub>-alkylene which is substituted one to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, or fluorine, ~~or phenyl~~,

C<sub>2</sub>-C<sub>6</sub>-alkylene, in which a methylene unit is isosterically replaced by O, S, NR<sup>9</sup>, CO, SO or SO<sub>2</sub>, wherein, with the exception of CO, the isosteric substitution is not adjacent to the amide group and R<sup>9</sup> is selected from the group consisting of

hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>1</sub>-C<sub>6</sub>-acyl and C<sub>1</sub>-C<sub>6</sub>-alkanesulfonyl,

~~1,2-cyclopropylene,~~

C<sub>2</sub>-C<sub>6</sub>-alkenylene,

a substituted C<sub>2</sub>-C<sub>6</sub>-alkenylene which is substituted once to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, fluorine, or cyano ~~or phenyl~~,

C<sub>4</sub>-C<sub>6</sub>-alkadienylene,

a substituted C<sub>4</sub>-C<sub>6</sub>-alkadienylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, or cyano ~~or phenyl~~;

1,3,5-hexatrienylene,

a 1,3,5-hexatrienylene which is substituted by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, or cyano ~~or phenyl~~, and

ethinylene,

D is selected from the group consisting of C<sub>2</sub>-C<sub>10</sub>-alkylene,

a substituted C<sub>2</sub>-C<sub>10</sub>-alkylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

C<sub>4</sub>-C<sub>10</sub>-alkenylene,

a substituted C<sub>4</sub>-C<sub>10</sub>-alkenylene which is substituted once

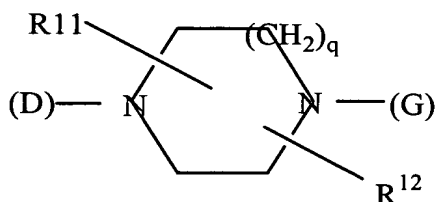
or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

C<sub>4</sub>-C<sub>10</sub>-alkynylene,

a substituted C<sub>4</sub>-C<sub>10</sub>-alkynylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy; and

C<sub>2</sub>-C<sub>10</sub>-alkylene, C<sub>4</sub>-C<sub>10</sub>-alkenylene or C<sub>4</sub>-C<sub>10</sub>-alkynylene, in which one to three methylene units are isosterically replaced by O, S, NR<sup>10</sup>, CO, SO, or SO<sub>2</sub>, wherein R<sup>10</sup> has the same meaning as R<sup>9</sup>, but is selected independently thereof;

E is



wherein

q is ~~1, 2, or 3~~;

R<sup>11</sup> is selected from the group consisting of hydrogen C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, hydroxymethyl, carboxy, or C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl,

R<sup>12</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl and an oxo group adjacent to a nitrogen atom,

and wherein R<sup>11</sup> and R<sup>12</sup> may together form a C<sub>1</sub>-C<sub>3</sub>-alkylene bridge under formation of a bicyclic ring system;

G is ~~selected from the group consisting of G1, G2, G3, G4, and G5, wherein~~

$G^1$  is  $-(CH_2)_r-(CR^{14}R^{15})_s-R^{13}$

r is 0, 1, 2 or 3,

s is 0 or 1,

$R^{13}$  is selected from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_3$ - $C_6$ -alkynyl,  $C_3$ - $C_8$ -cycloalkyl,

saturated or unsaturated four to eight-membered heterocycles,

saturated or unsaturated four to eight-membered heterocycles which contain one or two hetero-atoms selected from the group consisting of N, S and O,

benzyl, phenyl,

monocyclic aromatic five or six-membered heterocycles which contain one to three hetero-atoms selected from the group consisting of N, S and O where the heterocycles are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage may occur either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O and the linkage may occur either over an aromatic ring or a hydrogenated ring and either directly or over a methylene group,

R<sup>14</sup> has the same meaning as R<sup>13</sup>, but is selected independently thereof;

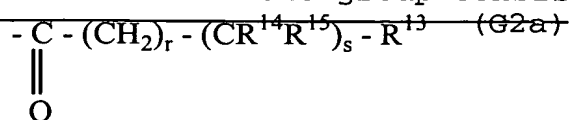
R<sup>15</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, benzyl, and phenyl,

monocyclic aromatic five or six-member heterocycles, which contain one to three hetero-atoms selected from the group consisting of N, S and O and wherein the heterocycles are either bound directly or over a methylene group,

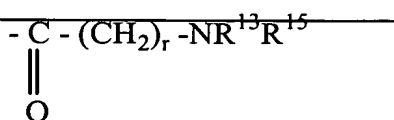
anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O and the linkage occurs either over an aromatic ring or a hydrogenated ring and either directly or over a methylene group,

~~G<sup>2</sup> is selected from the group consisting of~~



~~and~~



~~wherein r, s and the substituents R<sup>13</sup> to R<sup>15</sup> can have the above meaning, or the group -NR<sup>13</sup>R<sup>15</sup> is a nitrogen-containing heterocycle,~~

~~wherein -NR<sup>13</sup>R<sup>15</sup> is a nitrogen-containing heterocycle bound over the nitrogen atom selected from the group consisting of~~

~~saturated or unsaturated monocyclic, four to eight-membered nitrogen-containing heterocycles,~~

~~saturated or unsaturated monocyclic, four to eight-membered nitrogen-containing heterocycles which, aside from the essential nitrogen atom, contain one or two further hetero-atoms selected from the group consisting of N, S and O,~~

~~saturated or unsaturated bi- or tricyclic anellated or bridged nitrogen-containing heterocycles with 8 to 16 ring atoms,~~

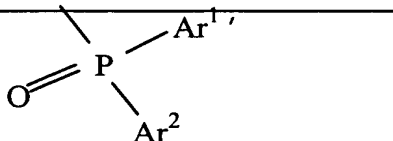
~~saturated or unsaturated bi- or tricyclic anellated or bridged nitrogen-containing heterocycles with 8 to 16 ring atoms which aside from the essential nitrogen atom, contain one or two further hetero-atoms that are selected from N, S and O,~~



~~—G<sup>3</sup> is SO<sub>2</sub>-(CH<sub>2</sub>)<sub>r</sub>-R<sup>13</sup>~~

~~wherein r and R<sup>13</sup> have the above meanings,~~

~~—G<sup>4</sup> is—~~



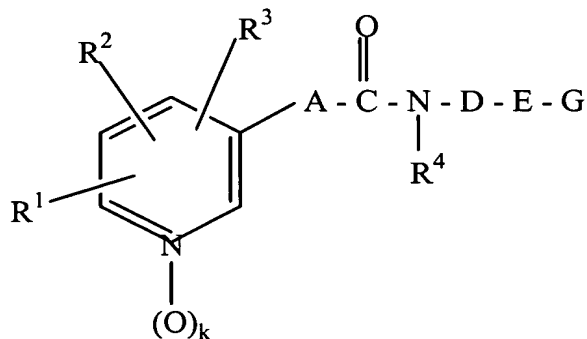
~~—wherein~~

~~—Ar<sup>1</sup> and Ar<sup>2</sup> are selected independently from each other from the group consisting of phenyl, pyridyl and naphthyl,~~

~~—G<sup>5</sup> is COR<sup>16</sup>,~~

~~—R<sup>16</sup> is selected from the group consisting of trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>3</sub>-C<sub>6</sub> alkenyloxy, and benzyloxy.~~

12. (Currently amended) A pharmaceutical composition comprising the compound of formula (I)



(I)

wherein:

R<sup>1</sup> is selected from the group consisting of hydrogen, halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>2</sub>-C<sub>6</sub>-alkinyl, trifluoromethyl, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl, C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>3</sub>-C<sub>6</sub>-alkenyloxy, C<sub>3</sub>-C<sub>6</sub>-alkinyloxy, benzyloxy, C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyloxy, C<sub>1</sub>-C<sub>6</sub>-alkylthio, C<sub>3</sub>-C<sub>6</sub>-alkenylthio, C<sub>3</sub>-C<sub>6</sub>-alkinylthio, C<sub>3</sub>-C<sub>8</sub>-cycloalkyloxy, C<sub>3</sub>-C<sub>8</sub>-cycloalkylthio, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, aminocarbonyl, C<sub>2</sub>-C<sub>7</sub>-alkylaminocarbonyl, C<sub>3</sub>-C<sub>13</sub>-dialkylaminocarbonyl, carboxy, phenyl, phenoxy, phenylthio, pyridyloxy, pyridylthio, and NR<sup>5</sup>R<sup>6</sup>, wherein

R<sup>5</sup> and R<sup>6</sup> are selected independently of each other from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, benzyl and phenyl;

R<sup>2</sup> is selected from the group consisting of hydrogen, halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy, benzyloxy and C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy;

R<sup>3</sup> is selected from the group consisting of hydrogen, halogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl and C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl;

R<sup>4</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy and benzyloxy;

k is 0 or 1,

A is selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylene,

a substituted C<sub>1</sub>-C<sub>6</sub>-alkylene which is substituted one to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, or fluorine, ~~or phenyl,~~

C<sub>2</sub>-C<sub>6</sub>-alkylene, in which a methylene unit is isosterically replaced by O, S, NR<sup>9</sup>, CO, SO or SO<sub>2</sub>, wherein, with the exception of CO, the isosteric substitution is not adjacent to the amide group and R<sup>9</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>1</sub>-C<sub>6</sub>-acyl and C<sub>1</sub>-C<sub>6</sub>-alkanesulfonyl,

~~1,2-cyclopropylene,~~

C<sub>2</sub>-C<sub>6</sub>-alkenylene,

a substituted C<sub>2</sub>-C<sub>6</sub>-alkenylene which is substituted once to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, or fluorine, cyano ~~or phenyl,~~

C<sub>4</sub>-C<sub>6</sub>-alkadienylene,

a substituted C<sub>4</sub>-C<sub>6</sub>-alkadienylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, or cyano ~~or phenyl;~~

1,3,5-hexatrienylene,

a 1,3,5-hexatrienylene which is substituted by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, or cyano ~~or phenyl,~~ and

ethynylene,

D is selected from the group consisting of C<sub>2</sub>-C<sub>10</sub>-

alkylene,

a substituted  $C_2$ - $C_{10}$ -alkylene which is substituted once or twice by  $C_1$ - $C_6$ -alkyl, hydroxy, or  $C_1$ - $C_6$ -alkoxy;

$C_4$ - $C_{10}$ -alkenylene,

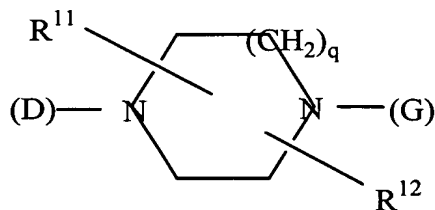
a substituted  $C_4$ - $C_{10}$ -alkenylene which is substituted once or twice by  $C_1$ - $C_6$ -alkyl, hydroxy, or  $C_1$ - $C_6$ -alkoxy;

$C_4$ - $C_{10}$ -alkynylene,

a substituted  $C_4$ - $C_{10}$ -alkynylene which is substituted once or twice by  $C_1$ - $C_6$ -alkyl, hydroxy, or  $C_1$ - $C_6$ -alkoxy; and

$C_2$ - $C_{10}$ -alkylene,  $C_4$ - $C_{10}$ -alkenylene or  $C_4$ - $C_{10}$ -alkynylene, in which one to three methylene units are isosterically replaced by O, S,  $NR^{10}$ , CO, SO, or  $SO_2$ , wherein  $R^{10}$  has the same meaning as  $R^9$ , but is selected independently thereof;

E is



wherein

$q$  is ~~1, 2, or 3~~;

$R^{11}$  is selected from the group consisting of hydrogen  $C_1$ -

C<sub>6</sub>-alkyl, hydroxy, hydroxymethyl, carboxy, or C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl,

R<sup>12</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl and an oxo group adjacent to a nitrogen atom,

~~G is selected from the group consisting of G1, G2, G3, G4, and G5, wherein~~

G<sup>1</sup> is  $-(\text{CH}_2)_r-(\text{CR}^{14}\text{R}^{15})_s-\text{R}^{13}$

r is 0 to 3,

s is 0 or 1,

R<sup>13</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl,

saturated or unsaturated four to eight-membered heterocycles which contain one or two hetero-atoms selected from the group consisting of N, S and O,

benzyl, phenyl,

monocyclic aromatic five or six-membered heterocycles,

monocyclic aromatic five or six-membered heterocycles which contain one to three hetero-atoms selected from the group consisting of N, S and O where the heter-atoms and are either bound directly or over a methylene group,

annelated bi- and tricyclic aromatic or partially

hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O and the linkage can occur either over an aromatic ring or a hydrogenated ring and either directly or over a methylene group,

R<sup>14</sup> has the same meaning as R<sup>13</sup>, but is selected independently thereof;

R<sup>15</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, benzyl, and phenyl,

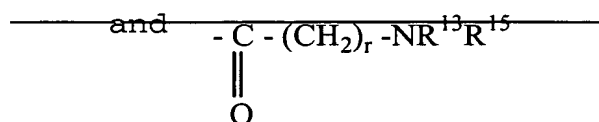
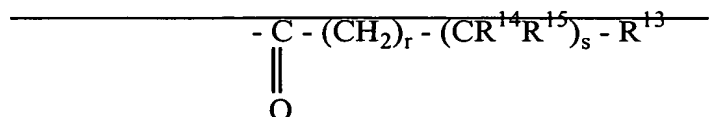
monocyclic aromatic five or six-member heterocycles, which contain one to three hetero-atoms selected from the group consisting of N, S and O and wherein the hetero-atoms are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring

atoms are selected from the group consisting of N, S and O and the linkage occurs either over an aromatic ring or a hydrated ring and either directly or over a methylene group,

~~G<sup>2</sup> is selected from the group consisting of~~



~~wherein r, s and the substituents R<sup>13</sup> to R<sup>15</sup> can have the above meaning, or the group -NR<sup>13</sup>R<sup>15</sup>,~~

~~wherein -NR<sup>13</sup>R<sup>15</sup> is a nitrogen containing heterocycle bound over the nitrogen atom selected from the group consisting of~~

~~saturated or unsaturated monocyclic, four to eight-membered nitrogen-containing heterocycles,~~

~~saturated or unsaturated monocyclic, four to eight-membered nitrogen-containing heterocycles which, aside from the essential nitrogen atom, contain one or two further hetero-atoms selected from the group consisting of N, S and O,~~

~~saturated or unsaturated bi- or tricyclic anellated or bridged nitrogen-containing heterocycles with 8 to 16 ring atoms,~~

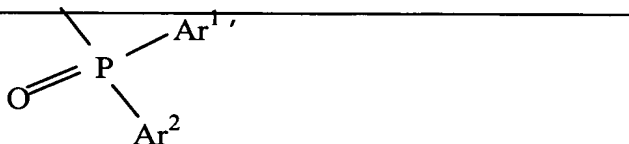
~~saturated or unsaturated bi- or tricyclic anellated or bridged nitrogen-containing heterocycles with 8 to 16 ring~~

~~atoms which aside from the essential nitrogen atom, contain one or two further hetero-atoms that are selected from N, S and O,~~

~~G<sup>3</sup> is SO<sub>2</sub>-(CH<sub>2</sub>)<sub>r</sub>-R<sup>13</sup>-(G3)~~

~~wherein r and R<sup>13</sup> have the above meanings,~~

~~G<sup>4</sup> is~~



~~wherein~~

~~Ar<sup>1</sup> and Ar<sup>2</sup> are selected independently from each other from phenyl, pyridyl or naphthyl,~~

~~G<sup>5</sup> is COR<sup>16</sup>-(G5)~~

~~R<sup>16</sup> is selected from the group consisting of trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>3</sub>-C<sub>6</sub> alkenyloxy, and benzyloxy,~~

wherein G is not -(CH<sub>2</sub>)<sub>r</sub>-(CR<sup>14</sup>R<sup>15</sup>)<sub>s</sub>-R<sup>13</sup> when  
 R<sup>13</sup> represents pyridyl or phenyl, substituted by halogen, alkyl, alkoxy or trifluoromethyl,  
 R<sup>14</sup> represents hydrogen or phenyl, substituted by halogen, alkyl, alkoxy or trifluoromethyl,  
 R<sup>15</sup> represents hydrogen,

A represents alkylene, substituted ethenylene or



butadienylene,

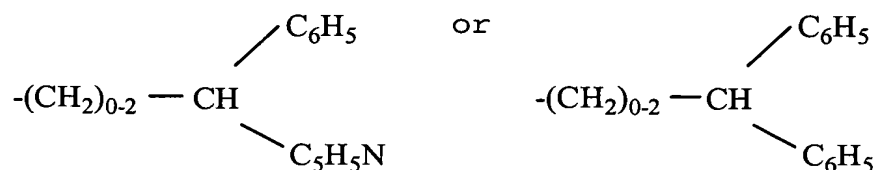
D represents alkylene or alkenylene,

E represents piperazine or homopiperazine, and

S is 1;

wherein  $G^1$  is not phenyl, N-containing heteroaryl,

$-(CH_2)_{0-2}-CH_2-C_6H_5$ ,  $-(CH_2)_{0-2}-CH_2-C_5H_5N$ ,



wherein the phenyl group or moiety may be substituted by one or two members selected from the group consisting of halogen, a  $C_1$ - $C_6$  alkyl, trifluoromethyl and a  $C_1$ - $C_6$  alkoxy, when

$R^1$  is hydrogen, a halogen, a  $C_1$ - $C_6$ -alkyl, a  $C_1$ - $C_6$ -alkoxy, a  $C_1$ - $C_6$ -alkylthio, a  $C_3$ - $C_8$ -cycloalkyloxy, a  $C_3$ - $C_8$ -cycloalkylthio, a  $C_2$ - $C_7$ -alkoxycarbonyl, carboxy, a phenyl, a phenoxy, a phenylthio, 3-pyridyloxy or 3-pyridylthio;

$R^2$  is hydrogen, a hydroxy, a  $C_1$ - $C_7$ -alkanoyloxy or a  $C_2$ - $C_7$ -alkoxycarbonyloxy, or when  $R^1$  and  $R_2$  are adjacent to each other, they may combine to form tetramethylene or  $-CH_2OCR^{8a}R^{9a}O-$ , wherein  $R^{8a}$  and  $R^{9a}$  are the same or different and are each a  $C_1$ - $C_6$ -alkyl;

$R^3$  is hydrogen, a  $C_1$ - $C_6$ -alkyl or a hydroxy- $C_1$ - $C_6$ -alkyl;

A is a  $C_1$ - $C_6$ -alkylene or  $-(CR^{6a}=CR^{7a})ra-$ , wherein  $R^{6a}$  is hydrogen, a  $C_1$ - $C_6$ -alkyl or a phenyl,  $R^{7a}$  is hydrogen, a  $C_1$ - $C_6$ -alkyl, cyano or a phenyl, and  $ra$  is 1 or 2;

$R^4$  is hydrogen;

D is a  $C_1$ - $C_{10}$ -alkylene or a  $C_4$ - $C_{10}$ -alkylene interrupted by at least one double bond; and

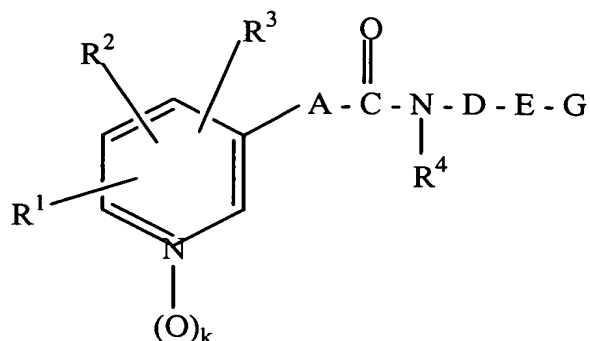
E is selected from the group consisting of piperazine,

piperazine, which is substituted by C<sub>1</sub>-C<sub>6</sub>-alkyl, homopiperazine, and homopiperazine, which is substituted by C<sub>1</sub>-C<sub>6</sub>-alkyl.

14. (Previously presented) The pharmaceutical composition according to claim 12, wherein the pharmaceutical composition is present in a solid, peroral administrable form as a tablet, capsule, coated tablet, or as a liquid, peroral administration solution, suspension, effervescent tablet, in the form of tabs or sachets, which may be in the form of a suitable injection or infusion preparation together with suitable pharmaceutically acceptable carriers and adjuvants, in the form of a concentrate, powder or lyophilisate, in the form of a transdermal therapeutic system for systemic treatment, in the form of a gastrointestinal therapeutic system (GITS) for systemic treatment, in the form of a salve, suspension, emulsion, a balm or plaster or in the form of an externally applicable solution, in the form of a rectal, genital, or transurethral administration emulsion, a solution, a liposomal solution, an implant, suppository or a capsule, in the form of a composition capable of being applied nasally, otologically or ophthalmologically, or in a buccally applicable form.

24. (Previously presented) The pharmaceutical composition according to claim 12, wherein a dosage unit for single administration contains about 0.001 to about 5000 mg active ingredient.

32. (Currently amended) A pharmaceutical composition comprising the compound of formula (I)



(I)

wherein

$R^1$  is selected from the group consisting of hydrogen, halogen, cyano,  $C_1$ - $C_6$ -alkyl, trifluoromethyl,  $C_3$ - $C_8$ -cycloalkyl,  $C_1$ - $C_6$ -hydroxyalkyl, hydroxy,  $C_1$ - $C_4$ -alkoxy, benzyloxy,  $C_1$ - $C_4$ -alkylthio,  $C_1$ - $C_5$ -alkanoyloxy,  $C_1$ - $C_4$ -alkylthio,  $C_2$ - $C_5$ -alkoxycarbonyl, aminocarbonyl,  $C_2$ - $C_5$ -alkylaminocarbonyl,  $C_3$ - $C_9$ -dialkylaminocarbonyl, carboxy, phenyl, phenoxy, phenylthio, pyridyloxy, and  $NR^5R^6$ , wherein

$R^5$  and  $R^6$  are selected independently of each other from hydrogen and  $C_1$ - $C_6$ -alkyl;

$R^2$  is selected from the group consisting of hydrogen, halogen, cyano,  $C_1$ - $C_6$ -alkyl, trifluoromethyl, hydroxy, and  $C_1$ - $C_4$ -alkoxy;

$R^3$  is selected from the group consisting of hydrogen, halogen and  $C_1$ - $C_6$ -alkyl;

$R^4$  is selected from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_3$ - $C_6$ -cycloalkyl, hydroxy,  $C_1$ - $C_6$ -alkoxy

and benzyloxy;

k is 0 or 1,

A is selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylene,

a substituted C<sub>1</sub>-C<sub>6</sub>-alkylene which is substituted one to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, or fluorine, ~~or phenyl~~,

C<sub>2</sub>-C<sub>6</sub>-alkylene, in which a methylene unit is isosterically replaced by O, S, NR<sup>9</sup>, CO, SO or SO<sub>2</sub>, wherein, with the exception of CO, the isosteric substitution is not adjacent to the amide group and, the residue R<sup>9</sup>, is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-acyl and methane sulfonyl;

~~1,2-cyclopropylene,~~

C<sub>2</sub>-C<sub>6</sub>-alkenylene,

a substituted C<sub>2</sub>-C<sub>6</sub>-alkenylene which is substituted once to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, fluorine, or cyano-~~or phenyl~~,

C<sub>4</sub>-C<sub>6</sub>-alkadienylene,

a substituted C<sub>4</sub>-C<sub>6</sub>-alkadienylene which is substituted once to twice by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, or cyano-~~or phenyl~~;

1,3,5-hexatrienylene,

a substituted 1,3,5-hexatrienylene which is substituted

by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, cyano, and

ethynylene,

D is selected from the group consisting of C<sub>2</sub>-C<sub>10</sub>-alkylene,

a substituted C<sub>2</sub>-C<sub>10</sub>-alkylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl or hydroxy;

C<sub>4</sub>-C<sub>10</sub>-alkenylene,

a substituted C<sub>4</sub>-C<sub>10</sub>-alkenylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl or hydroxy;

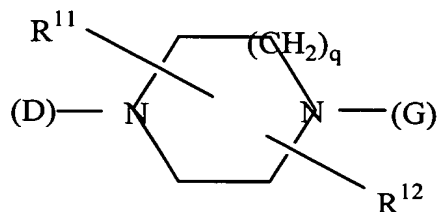
C<sub>4</sub>-C<sub>10</sub>-alkynylene,

a substituted C<sub>4</sub>-C<sub>10</sub>-alkynylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl or hydroxy; and

C<sub>2</sub>-C<sub>10</sub>-alkylene, C<sub>4</sub>-C<sub>10</sub>-alkenylene or C<sub>4</sub>-C<sub>10</sub>-alkynylene, wherein one to three methylene units are isosterically replaced by O, S, NR<sup>10</sup>, CO, SO, or SO<sub>2</sub>, wherein

R<sup>10</sup> has the same meaning as R<sup>9</sup>, but is selected independently thereof;

E is



wherein

$q$  is ~~1, 2, or 3~~;

$R^{11}$  is selected from the group consisting of hydrogen  $C_1$ - $C_3$ -alkyl, hydroxy, hydroxymethyl, carboxy, and  $C_2$ - $C_7$ -alkoxycarbonyl and

$R^{12}$  is selected from the group consisting of hydrogen, and an oxo group adjacent to a nitrogen atom,

and wherein  $R^{11}$  and  $R^{12}$  may together form a  $C_1$ - $C_3$ -alkylene bridge under formation of a bicyclic ring system;

~~$G$  is selected from the group consisting of  $G1$ ,  $G2$ ,  $G3$ ,  $G4$ , and  $G5$ , wherein~~

$G^1$  is  $-(CH_2)_r-(CR^{14}R^{15})_s-R^{13}$

$r$  is 0, 1 or 2,

$s$  is 0 or 1,

$R^{13}$  is selected from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_3$ - $C_6$ -alkynyl,  $C_3$ - $C_8$ -cycloalkyl, ~~benzyl~~, phenyl;

monocyclic aromatic five or six-membered heterocycles, which contain one to three hetero-atoms selected from the group consisting of N, S and O, wherein the heterocycles are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O, wherein the linkage occurs either over an aromatic ring or a hydrogenated ring and either directly or over a methylene group,

R<sup>14</sup> has the same meaning as R<sup>13</sup>, but is selected independently thereof;

R<sup>15</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, benzyl, phenyl,

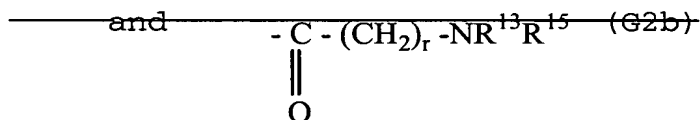
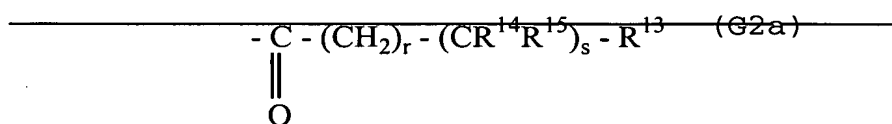
monocyclic aromatic five or six-membered heterocycles, which contain one to three hetero-atoms selected from the group consisting of N, S and O, wherein the heterocycles are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms

and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group, and

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms can be selected from N, S and O and the linkage may occur either over an aromatic ring or a hydrogenated ring and either directly or over a methylene group;

~~G<sup>2</sup> is selected from the group consisting of~~



~~wherein r, s and the substituents R<sup>13</sup> to R<sup>15</sup> can have the above meaning, or the group -NR<sup>13</sup>R<sup>15</sup> is a nitrogen-containing heterocycle,~~

~~wherein -NR<sup>13</sup>R<sup>15</sup> is a nitrogen-containing heterocycle bound over the nitrogen atom, the nitrogen-containing heterocycle selected from the group consisting of~~

~~saturated or unsaturated monocyclic, four to eight-membered heterocycles which aside from the essential nitrogen atom contain one or two further hetero-atoms selected from the group consisting of N, S and O,~~



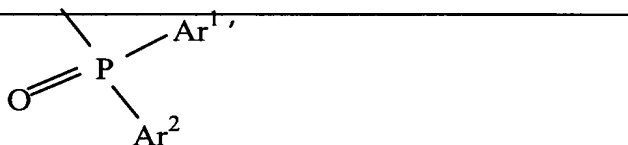
~~\_\_\_\_\_ saturated or unsaturated bi- or tricyclic anellated or bridged heterocycles with 8 to 16 ring atoms, and~~

~~\_\_\_\_\_ saturated or unsaturated bi- or tricyclic anellated or bridged heterocycles with 8 to 16 ring atoms that aside from the essential nitrogen atom, contain one or two further heteroatoms that are selected from the group consisting of N, S and O,~~

~~\_\_\_\_\_ G<sup>3</sup> is SO<sub>2</sub>-(CH<sub>2</sub>)<sub>r</sub>-R<sup>13</sup>~~

~~wherein r and R<sup>13</sup> have the above meaning,~~

~~\_\_\_\_\_ G<sup>4</sup> is~~



wherein

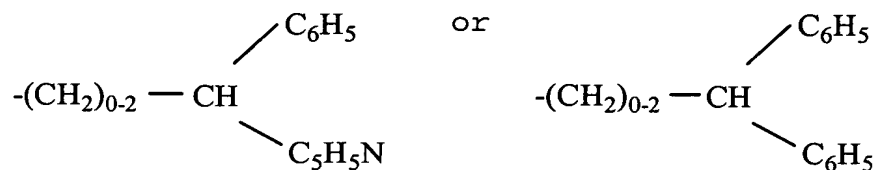
~~\_\_\_\_\_ Ar<sup>1</sup> and Ar<sup>2</sup> are be selected independently from each other from the group consisting of phenyl, pyridyl and naphthyl,~~

~~\_\_\_\_\_ G<sup>5</sup> is COR<sup>16</sup>~~

~~\_\_\_\_\_ R<sup>16</sup> is selected from the group consisting of trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>3</sub>-C<sub>6</sub> alkenyloxy, and benzyloxy,~~

wherein G is not phenyl, N-containing heteroaryl,

- (CH<sub>2</sub>)<sub>0-2</sub>-CH<sub>2</sub>-C<sub>6</sub>H<sub>5</sub>, - (CH<sub>2</sub>)<sub>0-2</sub>-CH<sub>2</sub>-C<sub>5</sub>H<sub>5</sub>N,

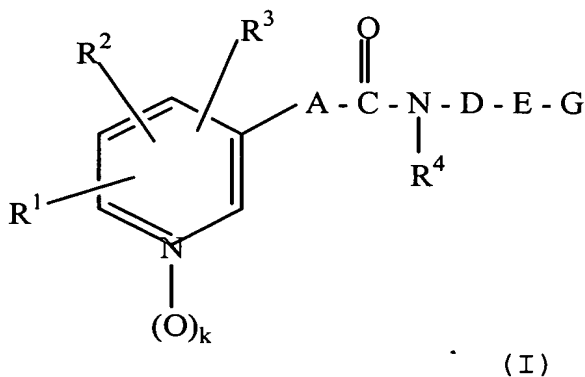


wherein the phenyl group or moiety may be substituted by one or two members selected from the group consisting of halogen, a C<sub>1</sub>-C<sub>6</sub> alkyl, trifluoromethyl and a C<sub>1</sub>-C<sub>6</sub> alkoxy, when

- R<sup>1</sup> is hydrogen, a halogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl, a C<sub>1</sub>-C<sub>6</sub>-alkoxy, a C<sub>1</sub>-C<sub>6</sub>-alkylthio, a C<sub>3</sub>-C<sub>8</sub>-cycloalkyloxy, a C<sub>3</sub>-C<sub>8</sub>-cycloalkylthio, a C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, carboxy, a phenyl, a phenoxy, a phenylthio, 3-pyridyloxy or 3-pyridylthio;
- R<sup>2</sup> is hydrogen, a hydroxy, a C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy or a C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyloxy, or when R<sup>1</sup> and R<sub>2</sub> are adjacent to each other, they may combine to form tetramethylene or -CH<sub>2</sub>OCR<sup>8a</sup>R<sup>9a</sup>O-, wherein R<sup>8a</sup> and R<sup>9a</sup> are the same or different and are each a C<sub>1</sub>-C<sub>6</sub>-alkyl;
- R<sup>3</sup> is hydrogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl or a hydroxy-C<sub>1</sub>-C<sub>6</sub>-alkyl;
- A is a C<sub>1</sub>-C<sub>6</sub>-alkylene or -(CR<sup>6a</sup>=CR<sup>7a</sup>)ra-, wherein R<sup>6a</sup> is hydrogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl or a phenyl, R<sup>7a</sup> is hydrogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl, cyano or a phenyl, and ra is 1 or 2;
- R<sup>4</sup> is hydrogen;
- D is a C<sub>1</sub>-C<sub>10</sub>-alkylene or a C<sub>4</sub>-C<sub>10</sub>-alkylene interrupted by at least one double bond; and
- E is selected from the group consisting of piperazine, piperazine, which is substituted by C<sub>1</sub>-C<sub>6</sub>-alkyl, homopiperazine, and homopiperazine, which is substituted by C<sub>1</sub>-C<sub>6</sub>-alkyl.

33. (Currently amended) A method of inhibiting tumor cell growth in a human or animal body comprising administering

to the human or animal body in need thereof an amount of a pharmaceutical composition effective for inhibiting tumor cell growth, wherein the pharmaceutical composition includes a compound of general formula (I)



wherein:

$R^1$  is selected from the group consisting of hydrogen, halogen, cyano,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_2$ - $C_6$ -alkinyl, trifluoromethyl,  $C_3$ - $C_8$ -cycloalkyl,  $C_1$ - $C_6$ -hydroxyalkyl, hydroxy,  $C_1$ - $C_6$ -alkoxy,  $C_3$ - $C_6$ -alkenyloxy,  $C_3$ - $C_6$ -alkinyloxy, benzyloxy,  $C_1$ - $C_7$ -alkanoyloxy,  $C_2$ - $C_7$ -alkoxycarbonyloxy,  $C_1$ - $C_6$ -alkylthio,  $C_3$ - $C_6$ -alkenylthio,  $C_3$ - $C_6$ -alkinylthio,  $C_3$ - $C_8$ -cycloalkyloxy,  $C_3$ - $C_8$ -cycloalkylthio,  $C_2$ - $C_7$ -alkoxycarbonyl, aminocarbonyl,  $C_2$ - $C_7$ -alkylaminocarbonyl,  $C_3$ - $C_{13}$ -dialkylaminocarbonyl, carboxy, phenyl, phenoxy, phenylthio, pyridyloxy, pyridylthio, and  $NR^5R^6$ , wherein

$R^5$  and  $R^6$  are selected independently of each other from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_3$ - $C_6$ -alkinyl, benzyl and phenyl;

$R^2$  is selected from the group consisting of hydrogen, halogen, cyano,  $C_1$ - $C_6$ -alkyl, trifluoromethyl, hydroxy,  $C_1$ - $C_6$ -alkoxy, benzyloxy and  $C_1$ - $C_7$ -alkanoyloxy;

R<sup>3</sup> is selected from the group consisting of hydrogen, halogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl and C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl;

R<sup>4</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy and benzyloxy;

k is 0 or 1,

A is selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylene,

a substituted C<sub>1</sub>-C<sub>6</sub>-alkylene which is substituted one to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, or fluorine, ~~or phenyl,~~

C<sub>2</sub>-C<sub>6</sub>-alkylene, in which a methylene unit is isosterically replaced by O, S, NR<sup>9</sup>, CO, SO or SO<sub>2</sub>, wherein, with the exception of CO, the isosteric substitution is not adjacent to the amide group and R<sup>9</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>1</sub>-C<sub>6</sub>-acyl and C<sub>1</sub>-C<sub>6</sub>-alkanesulfonyl,

~~1,2-cyclopropylene,~~

C<sub>2</sub>-C<sub>6</sub>-alkenylene,

a substituted C<sub>2</sub>-C<sub>6</sub>-alkenylene which is substituted once to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, fluorine, cyano ~~or phenyl,~~

C<sub>4</sub>-C<sub>6</sub>-alkadienylene,

a substituted C<sub>4</sub>-C<sub>6</sub>-alkadienylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, or cyano~~-or-phenyl~~;

1,3,5-hexatrienylene,

a 1,3,5-hexatrienylene which is substituted by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, or cyano~~-or-phenyl~~, and

ethynylene,

D is selected from the group consisting of C<sub>2</sub>-C<sub>10</sub>-alkylene,

a substituted C<sub>2</sub>-C<sub>10</sub>-alkylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

C<sub>4</sub>-C<sub>10</sub>-alkenylene,

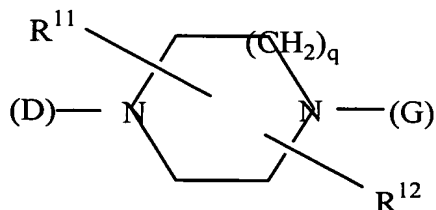
a substituted C<sub>4</sub>-C<sub>10</sub>-alkenylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

C<sub>4</sub>-C<sub>10</sub>-alkynylene,

a substituted C<sub>4</sub>-C<sub>10</sub>-alkynylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy; and

C<sub>2</sub>-C<sub>10</sub>-alkylene, C<sub>4</sub>-C<sub>10</sub>-alkenylene or C<sub>4</sub>-C<sub>10</sub>-alkynylene, in which one to three methylene units are isosterically replaced by O, S, NR<sup>10</sup>, CO, SO, or SO<sub>2</sub>, wherein R<sup>10</sup> has the same meaning as R<sup>9</sup>, but is selected independently thereof;

E is



wherein

$q$  is ~~1, 2, or 3~~;

$R^{11}$  is selected from the group consisting of hydrogen  $C_1$ - $C_6$ -alkyl, hydroxy, hydroxymethyl, carboxy, or  $C_2$ - $C_7$ -alkoxycarbonyl,

$R^{12}$  is selected from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl and an oxo group adjacent to a nitrogen atom,

~~$G$  is selected from the group consisting of  $G^1$ ,  $G^2$ ,  $G^3$ ,  $G^4$ , and  $G^5$ , wherein~~

$G^1$  is  $-(CH_2)_r-(CR^{14}R^{15})_s-R^{13}$

$r$  is 0 to 3,

$s$  is 0 or 1,

$R^{13}$  is selected from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_3$ - $C_6$ -alkinyl,  $C_3$ - $C_8$ -cycloalkyl,

saturated or unsaturated four to eight-membered heterocycles which contain one or two hetero-atoms selected from the group consisting of N, S and O,

benzyl, phenyl,

monocyclic aromatic five or six-membered heterocycles,

monocyclic aromatic five or six-membered heterocycles which contain one to three hetero-atoms selected from the group consisting of N, S and O where the heter-atoms and are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O and the linkage can occur either over an aromatic ring or a hydrated ring and either directly or over a methylene group,

R<sup>14</sup> has the same meaning as R<sup>13</sup>, but is selected independently thereof;

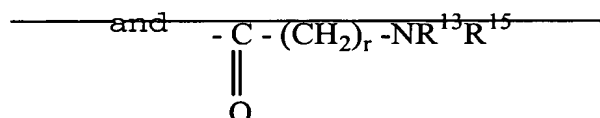
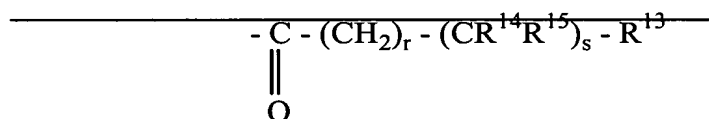
R<sup>15</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, benzyl, and phenyl,

monocyclic aromatic five or six-member heterocycles, which contain one to three hetero-atoms selected from the group consisting of N, S and O and wherein the hetero-atoms are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O and the linkage occurs either over an aromatic ring or a hydrated ring and either directly or over a methylene group,

~~— G<sup>2</sup> is selected from the group consisting of —~~



~~— wherein r, s and the substituents R<sup>13</sup> to R<sup>15</sup> can have the above meaning, or the group —NR<sup>13</sup>R<sup>15</sup>,~~

~~— wherein —NR<sup>13</sup>R<sup>15</sup> is a nitrogen containing heterocycle bound over the nitrogen atom selected from the group consisting of~~

~~— saturated or unsaturated monocyclic, four to eight-membered nitrogen-containing heterocycles,~~

~~— saturated or unsaturated monocyclic, four to eight-~~



~~membered nitrogen-containing heterocycles which, aside from the essential nitrogen atom, contain one or two further hetero-atoms selected from the group consisting of N, S and O,~~

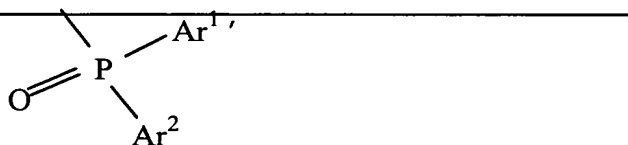
~~—saturated or unsaturated bi- or tricyclic anellated or bridged nitrogen-containing heterocycles with 8 to 16 ring atoms,~~

~~—saturated or unsaturated bi- or tricyclic anellated or bridged nitrogen-containing heterocycles with 8 to 16 ring atoms which aside from the essential nitrogen atom, contain one or two further hetero-atoms that are selected from N, S and O,~~

~~—G<sup>3</sup> is SO<sub>2</sub>-(CH<sub>2</sub>)<sub>r</sub>-R<sup>13</sup>-(G3)~~

~~wherein r and R<sup>13</sup> have the above meanings,~~

~~—G<sup>4</sup> is~~



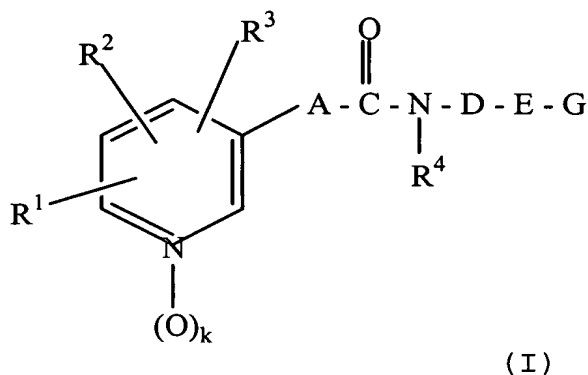
~~—wherein~~

~~—Ar<sup>1</sup> and Ar<sup>2</sup> are selected independently from each other from phenyl, pyridyl or naphthyl,~~

~~—G<sup>5</sup> is COR<sup>16</sup>~~

~~—R<sup>16</sup> is selected from the group consisting of trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>3</sub>-C<sub>6</sub> alkenyloxy, and benzyloxy.~~

34. (Currently amended) A method of suppressing autoimmune diseases in a human or animal body comprising administering to the human or animal body in need thereof an amount of a pharmaceutical composition effective for suppressing autoimmune reactions, wherein the pharmaceutical composition includes a compound of general formula (I)



wherein:

$R^1$  is selected from the group consisting of hydrogen, halogen, cyano,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_2$ - $C_6$ -alkinyl, trifluoromethyl,  $C_3$ - $C_8$ -cycloalkyl,  $C_1$ - $C_6$ -hydroxyalkyl, hydroxy,  $C_1$ - $C_6$ -alkoxy,  $C_3$ - $C_6$ -alkenyloxy,  $C_3$ - $C_6$ -alkinyloxy, benzyloxy,  $C_1$ - $C_7$ -alkanoyloxy,  $C_2$ - $C_7$ -alkoxycarbonyloxy,  $C_1$ - $C_6$ -alkylthio,  $C_3$ - $C_6$ -alkenylthio,  $C_3$ - $C_6$ -alkinylthio,  $C_3$ - $C_8$ -cycloalkyloxy,  $C_3$ - $C_8$ -cycloalkylthio,  $C_2$ - $C_7$ -alkoxycarbonyl, aminocarbonyl,  $C_2$ - $C_7$ -alkylaminocarbonyl,  $C_3$ - $C_{13}$ -dialkylaminocarbonyl, carboxy, phenyl, phenoxy, phenylthio, pyridyloxy, pyridylthio, and  $NR^5R^6$ , wherein

$R^5$  and  $R^6$  are selected independently of each other from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_3$ - $C_6$ -alkinyl, benzyl and phenyl;

$R^2$  is selected from the group consisting of hydrogen, halogen, cyano,  $C_1$ - $C_6$ -alkyl, trifluoromethyl, hydroxy,  $C_1$ - $C_6$ -

alkoxy, benzyloxy and C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy;

R<sup>3</sup> is selected from the group consisting of hydrogen, halogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl and C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl;

R<sup>4</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy and benzyloxy;

k is 0 or 1,

A is selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylene,

a substituted C<sub>1</sub>-C<sub>6</sub>-alkylene which is substituted one to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, or fluorine, ~~or phenyl~~,

C<sub>2</sub>-C<sub>6</sub>-alkylene, in which a methylene unit is isosterically replaced by O, S, NR<sup>9</sup>, CO, SO or SO<sub>2</sub>, wherein, with the exception of CO, the isosteric substitution is not adjacent to the amide group and R<sup>9</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>1</sub>-C<sub>6</sub>-acyl and C<sub>1</sub>-C<sub>6</sub>-alkanesulfonyl,

~~1,2-cyclopropylene,~~

C<sub>2</sub>-C<sub>6</sub>-alkenylene,

a substituted C<sub>2</sub>-C<sub>6</sub>-alkenylene which is substituted once to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, fluorine, or cyano ~~or phenyl~~,

C<sub>4</sub>-C<sub>6</sub>-alkadienylene,

a substituted C<sub>4</sub>-C<sub>6</sub>-alkadienylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, or cyano ~~or phenyl~~;

1,3,5-hexatrienylene,

a 1,3,5-hexatrienylene which is substituted by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, cyano or phenyl, and

ethinylene,

D is selected from the group consisting of C<sub>2</sub>-C<sub>10</sub>-alkylene,

a substituted C<sub>2</sub>-C<sub>10</sub>-alkylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

C<sub>4</sub>-C<sub>10</sub>-alkenylene,

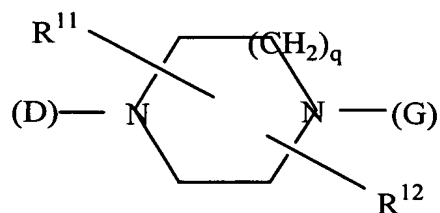
a substituted C<sub>4</sub>-C<sub>10</sub>-alkenylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

C<sub>4</sub>-C<sub>10</sub>-alkinylene,

a substituted C<sub>4</sub>-C<sub>10</sub>-alkinylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy; and

C<sub>2</sub>-C<sub>10</sub>-alkylene, C<sub>4</sub>-C<sub>10</sub>-alkenylene or C<sub>4</sub>-C<sub>10</sub>-alkinylene, in which one to three methylene units are isosterically replaced by O, S, NR<sup>10</sup>, CO, SO, or SO<sub>2</sub>, wherein R<sup>10</sup> has the same meaning as R<sup>9</sup>, but is selected independently thereof;

E is



wherein

q is ~~1, 2, or 3~~;

$R^{11}$  is selected from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl, hydroxy, hydroxymethyl, carboxy, or  $C_2$ - $C_7$ -alkoxycarbonyl,

$R^{12}$  is selected from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl and an oxo group adjacent to a nitrogen atom,

G is ~~selected from the group consisting of G1, G2, G3, G4, and G5, wherein~~

$G^1$  is  $-(CH_2)_r-(CR^{14}R^{15})_s-R^{13}$

r is 0 to 3,

s is 0 or 1,

$R^{13}$  is selected from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_3$ - $C_6$ -alkinyl,  $C_3$ - $C_8$ -cycloalkyl,

saturated or unsaturated four to eight-membered heterocycles which contain one or two hetero-atoms selected

from the group consisting of N, S and O,

benzyl, phenyl,

monocyclic aromatic five or six-membered heterocycles,

monocyclic aromatic five or six-membered heterocycles which contain one to three hetero-atoms selected from the group consisting of N, S and O where the heter-atoms and are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O and the linkage can occur either over an aromatic ring or a hydrated ring and either directly or over a methylene group,

R<sup>14</sup> has the same meaning as R<sup>13</sup>, but is selected independently thereof;

R<sup>15</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, benzyl, and phenyl,

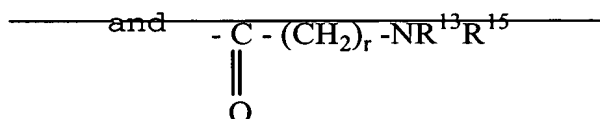
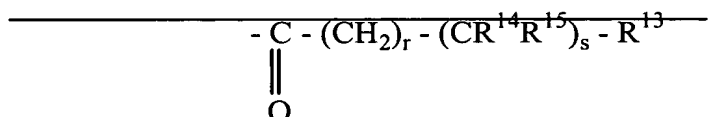
monocyclic aromatic five or six-member heterocycles, which contain one to three hetero-atoms selected from the group consisting of N, S and O and wherein the hetero-atoms

are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O and the linkage occurs either over an aromatic ring or a hydrated ring and either directly or over a methylene group,

~~— G<sup>2</sup> is selected from the group consisting of —~~



~~— wherein r, s and the substituents R<sup>13</sup> to R<sup>15</sup> can have the above meaning, or the group —NR<sup>13</sup>R<sup>15</sup>—~~

~~— wherein —NR<sup>13</sup>R<sup>15</sup>— is a nitrogen-containing heterocycle bound over the nitrogen atom selected from the group consisting of~~

~~— saturated or unsaturated monocyclic, four to eight-membered nitrogen-containing heterocycles,—~~

~~—saturated or unsaturated monocyclic, four to eight-~~  
~~membered nitrogen-containing heterocycles which, aside from~~  
~~the essential nitrogen atom, contain one or two further~~  
~~hetero-atoms selected from the group consisting of N, S and O,~~

~~—saturated or unsaturated bi- or tricyclic anellated or~~  
~~bridged nitrogen-containing heterocycles with 8 to 16 ring~~  
~~atoms,~~

~~—saturated or unsaturated bi- or tricyclic anellated or~~  
~~bridged nitrogen-containing heterocycles with 8 to 16 ring~~  
~~atoms which aside from the essential nitrogen atom, contain~~  
~~one or two further hetero-atoms that are selected from N, S and~~  
~~O,~~

~~—G<sup>3</sup> is SO<sub>2</sub>-(CH<sub>2</sub>)<sub>r</sub>-R<sup>13</sup>-(G3)~~

~~wherein r and R<sup>13</sup> have the above meanings,~~

~~—G<sup>4</sup> is—~~



~~—wherein~~

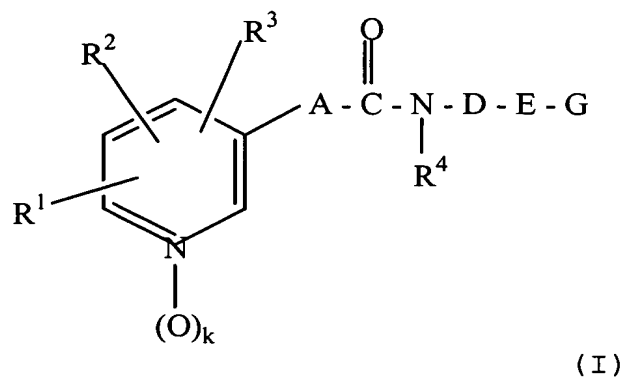
~~—Ar<sup>1</sup> and Ar<sup>2</sup> are selected independently from each other~~  
~~from phenyl, pyridyl or naphthyl,~~

~~—G<sup>5</sup> is COR<sup>16</sup>~~

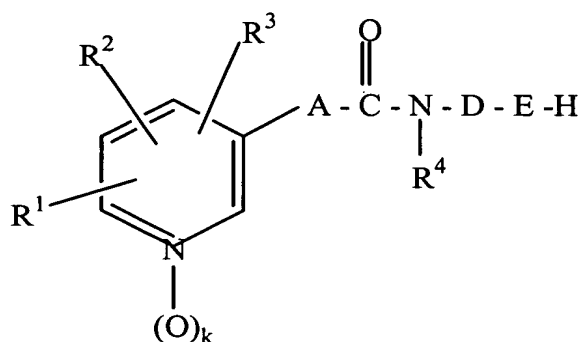
~~—R<sup>16</sup> is selected from the group consisting of~~  
~~trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>2</sub>-C<sub>6</sub> alkenyloxy, and benzyloxy.~~



35. (Currently amended) A method for production of compounds according to formula (I)



wherein compounds of a formula



are reacted with a compound of formula (IV)



wherein G is not hydrogen and is defined below, and L is a leaving group selected from the group consisting of alcohol, chlorine, bromine, iodine, sulfonic acid ester, methanesulfonyloxy, trifluoromethanesulfonyloxy, ethanesulfonyloxy, benzenesulfonyloxy, p-toluenesulfonyloxy, p-

bromobenzenesulfonyloxy, m-nitrobenzenesulfonyloxy, and a terminal epoxide group,

wherein the reaction occurs in an inert solvent at a temperature between about 0°C and about 180°C.,

wherein:

R<sup>1</sup> is selected from the group consisting of hydrogen, halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>2</sub>-C<sub>6</sub>-alkinyl, trifluoromethyl, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl, C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>3</sub>-C<sub>6</sub>-alkenyloxy, C<sub>3</sub>-C<sub>6</sub>-alkinyloxy, benzyloxy, C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyloxy, C<sub>1</sub>-C<sub>6</sub>-alkylthio, C<sub>3</sub>-C<sub>6</sub>-alkenylthio, C<sub>3</sub>-C<sub>6</sub>-alkinylthio, C<sub>3</sub>-C<sub>8</sub>-cycloalkyloxy, C<sub>3</sub>-C<sub>8</sub>-cycloalkylthio, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, aminocarbonyl, C<sub>2</sub>-C<sub>7</sub>-alkylaminocarbonyl, C<sub>3</sub>-C<sub>13</sub>-dialkylaminocarbonyl, carboxy, phenyl, phenoxy, phenylthio, pyridyloxy, pyridylthio, and NR<sup>5</sup>R<sup>6</sup>, wherein

R<sup>5</sup> and R<sup>6</sup> are selected independently of each other from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, benzyl and phenyl;

R<sup>2</sup> is selected from the group consisting of hydrogen, halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy, benzyloxy and C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy;

R<sup>3</sup> is selected from the group consisting of hydrogen, halogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl and C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl;

R<sup>4</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy and benzyloxy;

k is 0 or 1,

A is selected from the group consisting of  
C<sub>1</sub>-C<sub>6</sub>-alkylene,

a substituted C<sub>1</sub>-C<sub>6</sub>-alkylene which is substituted one to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, or fluorine, ~~or phenyl~~,

C<sub>2</sub>-C<sub>6</sub>-alkylene, in which a methylene unit is isosterically replaced by O, S, NR<sup>9</sup>, CO, SO or SO<sub>2</sub>, wherein, with the exception of CO, the isosteric substitution is not adjacent to the amide group and R<sup>9</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>1</sub>-C<sub>6</sub>-acyl and C<sub>1</sub>-C<sub>6</sub>-alkanesulfonyl,

~~1,2-cyclopropylene,~~

C<sub>2</sub>-C<sub>6</sub>-alkenylene,

a substituted C<sub>2</sub>-C<sub>6</sub>-alkenylene which is substituted once to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, fluorine, or cyano ~~or phenyl~~,

C<sub>4</sub>-C<sub>6</sub>-alkadienylene,

a substituted C<sub>4</sub>-C<sub>6</sub>-alkadienylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, or cyano ~~or phenyl~~;

1,3,5-hexatrienylene,

a 1,3,5-hexatrienylene which is substituted by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, or cyano ~~or phenyl~~, and

ethynylene,

D is selected from the group consisting of C<sub>2</sub>-C<sub>10</sub>-alkylene,

a substituted C<sub>2</sub>-C<sub>10</sub>-alkylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

C<sub>4</sub>-C<sub>10</sub>-alkenylene,

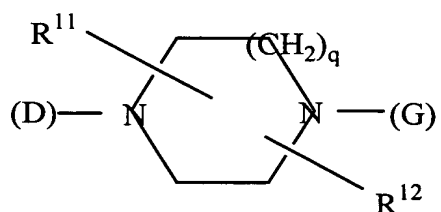
a substituted C<sub>4</sub>-C<sub>10</sub>-alkenylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

C<sub>4</sub>-C<sub>10</sub>-alkynylene,

a substituted C<sub>4</sub>-C<sub>10</sub>-alkynylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy; and

C<sub>2</sub>-C<sub>10</sub>-alkylene, C<sub>4</sub>-C<sub>10</sub>-alkenylene or C<sub>4</sub>-C<sub>10</sub>-alkynylene, in which one to three methylene units are isosterically replaced by O, S, NR<sup>10</sup>, CO, SO, or SO<sub>2</sub>, wherein R<sup>10</sup> has the same meaning as R<sup>9</sup>, but is selected independently thereof;

E is



wherein

q is ~~1, 2, or 3~~;

$R^{11}$  is selected from the group consisting of hydrogen  $C_1$ - $C_6$ -alkyl, hydroxy, hydroxymethyl, carboxy, or  $C_2$ - $C_7$ -alkoxycarbonyl,

$R^{12}$  is selected from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl and an oxo group adjacent to a nitrogen atom,

~~G is selected from the group consisting of G1, G2, G3, G4, and G5, wherein~~

$G^1$  is  $-(CH_2)_r-(CR^{14}R^{15})_s-R^{13}$

r is 0 to 3,

s is 0 or 1,

$R^{13}$  is selected from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_3$ - $C_6$ -alkinyl,  $C_3$ - $C_8$ -cycloalkyl,

saturated or unsaturated four to eight-membered heterocycles which contain one or two hetero-atoms selected from the group consisting of N, S and O,

benzyl, phenyl,

monocyclic aromatic five or six-membered heterocycles,

monocyclic aromatic five or six-membered heterocycles which contain one to three hetero-atoms selected from the group consisting of N, S and O where the heter-atoms and are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially

hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O and the linkage can occur either over an aromatic ring or a hydrogenated ring and either directly or over a methylene group,

R<sup>14</sup> has the same meaning as R<sup>13</sup>, but is selected independently thereof;

R<sup>15</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, benzyl, and phenyl,

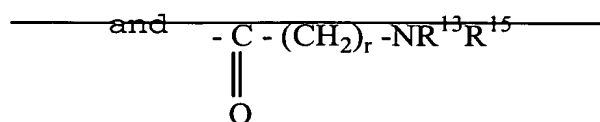
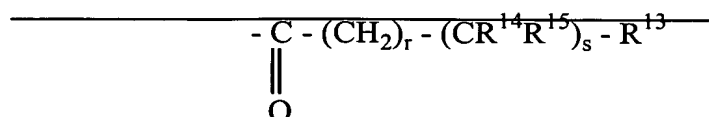
monocyclic aromatic five or six-member heterocycles, which contain one to three hetero-atoms selected from the group consisting of N, S and O and wherein the hetero-atoms are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O and

the linkage occurs either over an aromatic ring or a hydrated ring and either directly or over a methylene group,

~~— G<sup>2</sup> is selected from the group consisting of —~~



~~— wherein r, s and the substituents R<sup>13</sup> to R<sup>15</sup> can have the above meaning, or the group —NR<sup>13</sup>R<sup>15</sup>,~~

~~— wherein —NR<sup>13</sup>R<sup>15</sup> is a nitrogen-containing heterocycle bound over the nitrogen atom selected from the group consisting of~~

~~— saturated or unsaturated monocyclic, four to eight-membered nitrogen-containing heterocycles,~~

~~— saturated or unsaturated monocyclic, four to eight-membered nitrogen-containing heterocycles which, aside from the essential nitrogen atom, contain one or two further hetero-atoms selected from the group consisting of N, S and O,~~

~~— saturated or unsaturated bi- or tricyclic anellated or bridged nitrogen-containing heterocycles with 8 to 16 ring atoms,~~

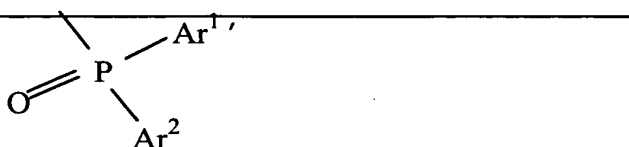
~~— saturated or unsaturated bi- or tricyclic anellated or bridged nitrogen-containing heterocycles with 8 to 16 ring atoms which aside from the essential nitrogen atom, contain~~

~~one or two further hetero-atoms that are selected from N, S and O,~~

~~—G<sup>3</sup> is —SO<sub>2</sub>—(CH<sub>2</sub>)<sub>r</sub>—R<sup>13</sup>—(G3)—~~

~~wherein r and R<sup>13</sup> have the above meanings,~~

~~—G<sup>4</sup> is —~~



~~—wherein~~

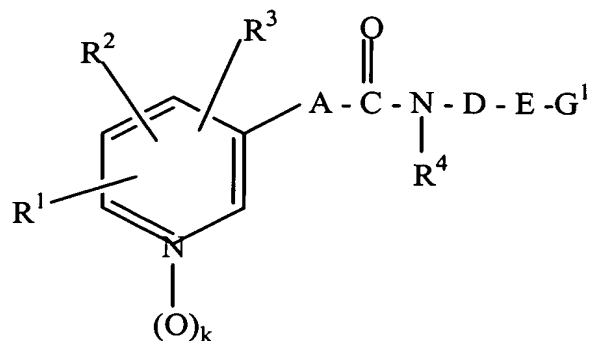
~~—Ar<sup>1</sup> and Ar<sup>2</sup> are selected independently from each other from phenyl, pyridyl or naphthyl,~~

~~—G<sup>5</sup> is —COR<sup>16</sup>~~

~~—R<sup>16</sup> is selected from the group consisting of trifluoromethyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>3</sub>-C<sub>6</sub>-alkenyloxy, and benzyloxy.~~

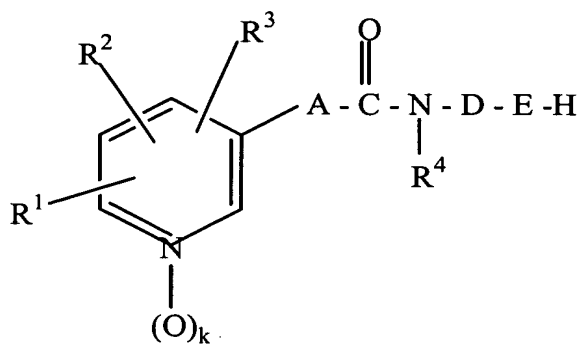
36. (Currently amended) A method for production of compounds according to formula (I)





(I)

wherein compounds of a formula



are reacted with a compound of formula (IV)

L - G (IV)

wherein G is selected from the group consisting of alkyl, alkenyl, alkynyl, cycloalkyl, aryl, aralkyl, heteroaryl and heteroaralkyl,

wherein L is a leaving group selected from the group consisting of alcohol, chlorine, bromine, iodine, sulfonic acid ester, methanesulfonyloxy, trifluoromethanesulfonyloxy, ethanesulfonyloxy, benzenesulfonyloxy, p-toluenesulfonyloxy, p-bromobenzenesulfonyloxy, m-nitrobenzenesulfonyloxy, and a terminal epoxide group,

wherein the reaction occurs in an inert solvent at a temperature between about 0°C and about 180°C.,  
wherein:

R<sup>1</sup> is selected from the group consisting of hydrogen, halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>2</sub>-C<sub>6</sub>-alkinyl, trifluoromethyl, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl, C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>3</sub>-C<sub>6</sub>-alkenyloxy, C<sub>3</sub>-C<sub>6</sub>-alkinyloxy, benzyloxy, C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyloxy, C<sub>1</sub>-C<sub>6</sub>-alkylthio, C<sub>3</sub>-C<sub>6</sub>-alkenylthio, C<sub>3</sub>-C<sub>6</sub>-alkinylthio, C<sub>3</sub>-C<sub>8</sub>-cycloalkyloxy, C<sub>3</sub>-C<sub>8</sub>-cycloalkylthio, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, aminocarbonyl, C<sub>2</sub>-C<sub>7</sub>-alkylaminocarbonyl, C<sub>3</sub>-C<sub>13</sub>-dialkylaminocarbonyl, carboxy, phenyl, phenoxy, phenylthio, pyridyloxy, pyridylthio, and NR<sup>5</sup>R<sup>6</sup>, wherein

R<sup>5</sup> and R<sup>6</sup> are selected independently of each other from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, benzyl and phenyl;

R<sup>2</sup> is selected from the group consisting of hydrogen, halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy, benzyloxy and C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy;

R<sup>3</sup> is selected from the group consisting of hydrogen, halogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl and C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl;

R<sup>4</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy and benzyloxy;

k is 0 or 1,

A is selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylene,

a substituted C<sub>1</sub>-C<sub>6</sub>-alkylene which is substituted one to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, or fluorine,

~~or phenyl,~~

C<sub>2</sub>-C<sub>6</sub>-alkylene, in which a methylene unit is isosterically replaced by O, S, NR<sup>9</sup>, CO, SO or SO<sub>2</sub>, wherein, with the exception of CO, the isosteric substitution is not adjacent to the amide group and R<sup>9</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>1</sub>-C<sub>6</sub>-acyl and C<sub>1</sub>-C<sub>6</sub>-alkanesulfonyl,

~~1,2-cyclopropylene,~~

C<sub>2</sub>-C<sub>6</sub>-alkenylene,

a substituted C<sub>2</sub>-C<sub>6</sub>-alkenylene which is substituted once to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, fluorine, or cyano ~~or phenyl,~~

C<sub>4</sub>-C<sub>6</sub>-alkadienylene,

a substituted C<sub>4</sub>-C<sub>6</sub>-alkadienylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, or cyano ~~or phenyl;~~

1,3,5-hexatrienylene,

a 1,3,5-hexatrienylene which is substituted by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, or cyano ~~or phenyl,~~ and

ethynylene,

D is selected from the group consisting of C<sub>2</sub>-C<sub>10</sub>-alkylene,

a substituted C<sub>2</sub>-C<sub>10</sub>-alkylene which is substituted once or

twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

C<sub>4</sub>-C<sub>10</sub>-alkenylene,

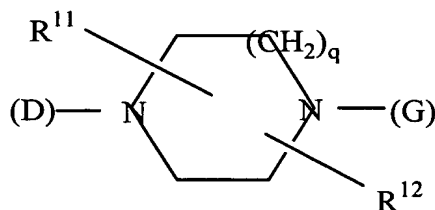
a substituted C<sub>4</sub>-C<sub>10</sub>-alkenylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

C<sub>4</sub>-C<sub>10</sub>-alkynylene,

a substituted C<sub>4</sub>-C<sub>10</sub>-alkynylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy; and

C<sub>2</sub>-C<sub>10</sub>-alkylene, C<sub>4</sub>-C<sub>10</sub>-alkenylene or C<sub>4</sub>-C<sub>10</sub>-alkynylene, in which one to three methylene units are isosterically replaced by O, S, NR<sup>10</sup>, CO, SO, or SO<sub>2</sub>, wherein R<sup>10</sup> has the same meaning as R<sup>9</sup>, but is selected independently thereof;

E is



wherein

q is ~~1, 2, or 3~~;

R<sup>11</sup> is selected from the group consisting of hydrogen C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, hydroxymethyl, carboxy, or C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl,

$R^{12}$  is selected from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl and an oxo group adjacent to a nitrogen atom,

$G^1$  is  $-(CH_2)_r-(CR^{14}R^{15})_s-R^{13}$

$r$  is 0 to 3,

$s$  is 0 or 1,

$R^{13}$  is selected from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_3$ - $C_6$ -alkinyl,  $C_3$ - $C_8$ -cycloalkyl,

saturated or unsaturated four to eight-membered heterocycles which contain one or two hetero-atoms selected from the group consisting of N, S and O,

benzyl, phenyl,

monocyclic aromatic five or six-membered heterocycles,

monocyclic aromatic five or six-membered heterocycles which contain one to three hetero-atoms selected from the group consisting of N, S and O where the heter-atoms and are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring

atoms are selected from the group consisting of N, S and O and the linkage can occur either over an aromatic ring or a hydrated ring and either directly or over a methylene group,

$R^{14}$  has the same meaning as  $R^{13}$ , but is selected independently thereof;

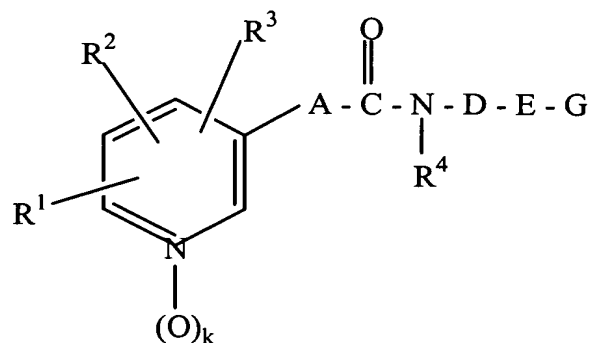
$R^{15}$  is selected from the group consisting of hydrogen, hydroxy, methyl, benzyl, and phenyl,

monocyclic aromatic five or six-member heterocycles, which contain one to three hetero-atoms selected from the group consisting of N, S and O and wherein the hetero-atoms are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O and the linkage occurs either over an aromatic ring or a hydrated ring and either directly or over a methylene group.

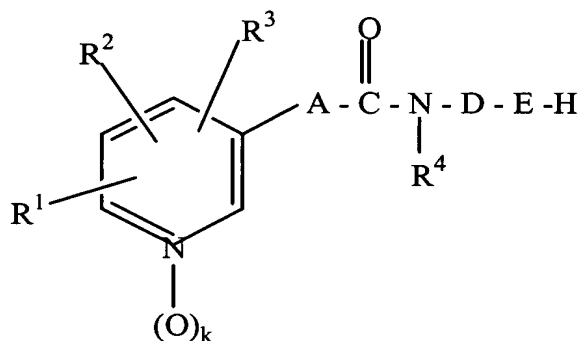
37. (Currently amended) A method for production of compounds according to formula (I)



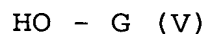
(I)

wherein G is selected from the group consisting of an acyl residue, a carbamoyl residue, a sulfonyl residue and a phosphinoyl residue,

wherein compounds of a formula



are reacted with a compound of formula (V)



wherein G is selected from the group consisting of acyl residues, carbamoyl residues, sulfonyl residues, and phosphinoyl residues,

wherein:

R<sup>1</sup> is selected from the group consisting of hydrogen, halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>2</sub>-C<sub>6</sub>-alkinyl, trifluoromethyl, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl, C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>3</sub>-C<sub>6</sub>-alkenyloxy, C<sub>3</sub>-C<sub>6</sub>-alkinyloxy, benzyloxy, C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyloxy, C<sub>1</sub>-C<sub>6</sub>-alkylthio, C<sub>3</sub>-C<sub>6</sub>-alkenylthio, C<sub>3</sub>-C<sub>6</sub>-alkinylthio, C<sub>3</sub>-C<sub>8</sub>-cycloalkyloxy, C<sub>3</sub>-C<sub>8</sub>-cycloalkylthio, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, aminocarbonyl, C<sub>2</sub>-C<sub>7</sub>-alkylaminocarbonyl, C<sub>3</sub>-C<sub>13</sub>-dialkylaminocarbonyl, carboxy, phenyl, phenoxy, phenylthio, pyridyloxy, pyridylthio, and NR<sup>5</sup>R<sup>6</sup>, wherein

R<sup>5</sup> and R<sup>6</sup> are selected independently of each other from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, benzyl and phenyl;

R<sup>2</sup> is selected from the group consisting of hydrogen, halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy, benzyloxy and C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy;

R<sup>3</sup> is selected from the group consisting of hydrogen, halogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl and C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl;

R<sup>4</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy and benzyloxy;

k is 0 or 1,

A is selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylene,

a substituted C<sub>1</sub>-C<sub>6</sub>-alkylene which is substituted one to



three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, or fluorine, ~~or phenyl,~~

C<sub>2</sub>-C<sub>6</sub>-alkylene, in which a methylene unit is isosterically replaced by O, S, NR<sup>9</sup>, CO, SO or SO<sub>2</sub>, wherein, with the exception of CO, the isosteric substitution is not adjacent to the amide group and R<sup>9</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>1</sub>-C<sub>6</sub>-acyl and C<sub>1</sub>-C<sub>6</sub>-alkanesulfonyl,

~~1,2-cyclopropylene,~~

C<sub>2</sub>-C<sub>6</sub>-alkenylene,

a substituted C<sub>2</sub>-C<sub>6</sub>-alkenylene which is substituted once to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, fluorine, or cyano ~~or phenyl,~~

C<sub>4</sub>-C<sub>6</sub>-alkadienylene,

a substituted C<sub>4</sub>-C<sub>6</sub>-alkadienylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, or cyano ~~or phenyl;~~

1,3,5-hexatrienylene,

a 1,3,5-hexatrienylene which is substituted by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, or cyano ~~or phenyl,~~ and

ethynylene,

D is selected from the group consisting of C<sub>2</sub>-C<sub>10</sub>-alkylene,

a substituted C<sub>2</sub>-C<sub>10</sub>-alkylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

C<sub>4</sub>-C<sub>10</sub>-alkenylene,

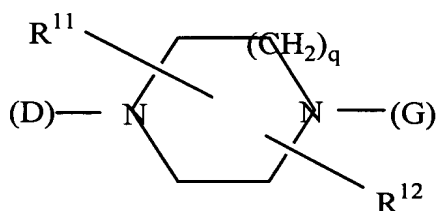
a substituted C<sub>4</sub>-C<sub>10</sub>-alkenylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

C<sub>4</sub>-C<sub>10</sub>-alkynylene,

a substituted C<sub>4</sub>-C<sub>10</sub>-alkynylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy; and

C<sub>2</sub>-C<sub>10</sub>-alkylene, C<sub>4</sub>-C<sub>10</sub>-alkenylene or C<sub>4</sub>-C<sub>10</sub>-alkynylene, in which one to three methylene units are isosterically replaced by O, S, NR<sup>10</sup>, CO, SO, or SO<sub>2</sub>, wherein R<sup>10</sup> has the same meaning as R<sup>9</sup>, but is selected independently thereof;

E is



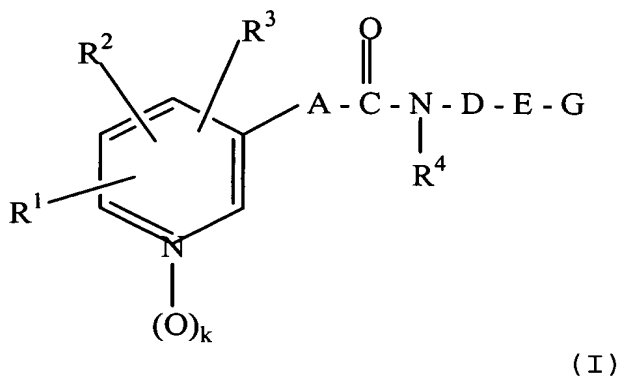
wherein

q is ~~1, 2, or 3~~;

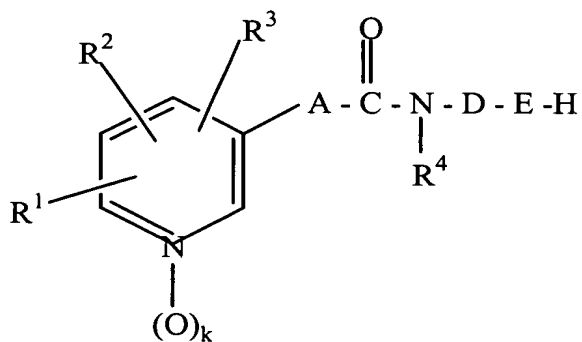
R<sup>11</sup> is selected from the group consisting of hydrogen C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, hydroxymethyl, carboxy, or C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl,

$R^{12}$  is selected from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl and an oxo group adjacent to a nitrogen atom.

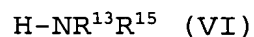
38. (Currently amended) A method for production of compounds according to formula (I)



wherein compounds of a formula



are reacted with a carbonyl group transmitter to an intermediate product which is reacted with a primary or secondary amine having the formula (VI)



wherein:

$R^1$  is selected from the group consisting of hydrogen, halogen, cyano,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_2$ - $C_6$ -alkinyl,

trifluoromethyl, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl, C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>3</sub>-C<sub>6</sub>-alkenyloxy, C<sub>3</sub>-C<sub>6</sub>-alkinyloxy, benzyloxy, C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyloxy, C<sub>1</sub>-C<sub>6</sub>-alkylthio, C<sub>3</sub>-C<sub>6</sub>-alkenylthio, C<sub>3</sub>-C<sub>6</sub>-alkinylthio, C<sub>3</sub>-C<sub>8</sub>-cycloalkyloxy, C<sub>3</sub>-C<sub>8</sub>-cycloalkylthio, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, aminocarbonyl, C<sub>2</sub>-C<sub>7</sub>-alkylaminocarbonyl, C<sub>3</sub>-C<sub>13</sub>-dialkylaminocarbonyl, carboxy, phenyl, phenoxy, phenylthio, pyridyloxy, pyridylthio, and NR<sup>5</sup>R<sup>6</sup>, wherein

R<sup>5</sup> and R<sup>6</sup> are selected independently of each other from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, benzyl and phenyl;

R<sup>2</sup> is selected from the group consisting of hydrogen, halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy, benzyloxy and C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy;

R<sup>3</sup> is selected from the group consisting of hydrogen, halogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl and C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl;

R<sup>4</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy and benzyloxy;

k is 0 or 1,

A is selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylene,

a substituted C<sub>1</sub>-C<sub>6</sub>-alkylene which is substituted one to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, or fluorine, ~~or phenyl,~~

C<sub>2</sub>-C<sub>6</sub>-alkylene, in which a methylene unit is isosterically replaced by O, S, NR<sup>9</sup>, CO, SO or SO<sub>2</sub>, wherein, with the exception of CO, the isosteric substitution is not adjacent to the amide group and R<sup>9</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>1</sub>-C<sub>6</sub>-acyl and C<sub>1</sub>-C<sub>6</sub>-alkanesulfonyl,

~~1,2-cyclopropylene,~~

C<sub>2</sub>-C<sub>6</sub>-alkenylene,

a substituted C<sub>2</sub>-C<sub>6</sub>-alkenylene which is substituted once to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, fluorine, or cyano ~~or phenyl~~,

C<sub>4</sub>-C<sub>6</sub>-alkadienylene,

a substituted C<sub>4</sub>-C<sub>6</sub>-alkadienylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, or cyano ~~or phenyl~~,

1,3,5-hexatrienylene,

a 1,3,5-hexatrienylene which is substituted by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, or cyano ~~or phenyl~~, and

ethinylene~~;~~

D is selected from the group consisting of C<sub>2</sub>-C<sub>10</sub>-alkylene,

a substituted C<sub>2</sub>-C<sub>10</sub>-alkylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy~~;~~

C<sub>4</sub>-C<sub>10</sub>-alkenylene,

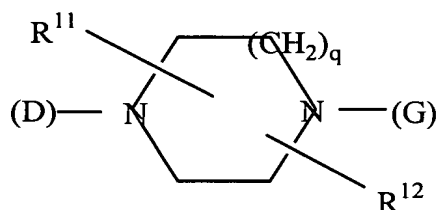
a substituted C<sub>4</sub>-C<sub>10</sub>-alkenylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy~~7~~

C<sub>4</sub>-C<sub>10</sub>-alkynylene,

a substituted C<sub>4</sub>-C<sub>10</sub>-alkynylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy~~7~~ and

C<sub>2</sub>-C<sub>10</sub>-alkylene, C<sub>4</sub>-C<sub>10</sub>-alkenylene or C<sub>4</sub>-C<sub>10</sub>-alkynylene, in which one to three methylene units are isosterically replaced by O, S, NR<sup>10</sup>, CO, SO, or SO<sub>2</sub>, wherein R<sup>10</sup> has the same meaning as R<sup>9</sup>, but is selected independently thereof;

E is



wherein

q is ~~1, 2, or 3~~;

R<sup>11</sup> is selected from the group consisting of hydrogen C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, hydroxymethyl, carboxy, or C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl,

R<sup>12</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl and an oxo group adjacent to a nitrogen atom,

wherein G is 
$$\begin{array}{c} -\text{C}-(\text{CH}_2)_r-\text{NR}^{13}\text{R}^{15} \\ || \\ \text{O} \end{array}$$

wherein  $r = 0$ ,

$\text{R}^{13}$  is selected from the group consisting of hydrogen,  $\text{C}_1$ - $\text{C}_6$ -alkyl,  $\text{C}_3$ - $\text{C}_6$ -alkenyl,  $\text{C}_3$ - $\text{C}_6$ -alkinyl,  $\text{C}_3$ - $\text{C}_8$ -cycloalkyl,

saturated or unsaturated four to eight-membered heterocycles which contain one or two hetero-atoms selected from the group consisting of N, S and O,

benzyl, phenyl,

monocyclic aromatic five or six-membered heterocycles,

monocyclic aromatic five or six-membered heterocycles which contain one to three hetero-atoms selected from the group consisting of N, S and O where the heter-atoms and are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring

atoms are selected from the group consisting of N, S and O and the linkage can occur either over an aromatic ring or a hydrated ring and either directly or over a methylene group,

R<sup>15</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, benzyl, and phenyl,

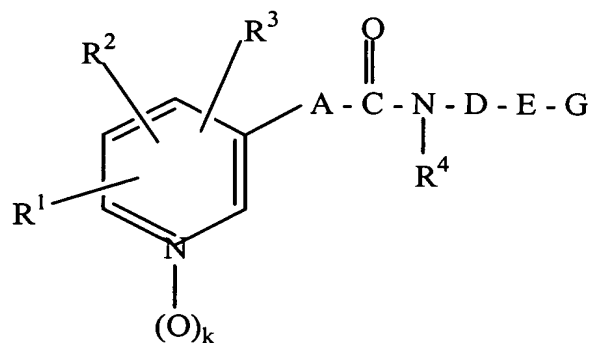
monocyclic aromatic five or six-member heterocycles, which contain one to three hetero-atoms selected from the group consisting of N, S and O and wherein the hetero-atoms are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O and the linkage occurs either over an aromatic ring or a hydrated ring and either directly or over a methylene group.

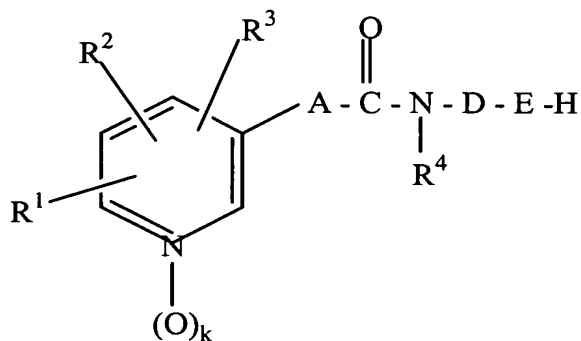
39. (Currently amended) A method for production of compounds according to formula (I)



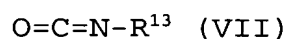


(I)

wherein compounds of a formula



are reacted with a compound of formula (VII)



wherein:

$R^1$  is selected from the group consisting of hydrogen, halogen, cyano,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_2$ - $C_6$ -alkinyl, trifluoromethyl,  $C_3$ - $C_8$ -cycloalkyl,  $C_1$ - $C_6$ -hydroxyalkyl, hydroxy,  $C_1$ - $C_6$ -alkoxy,  $C_3$ - $C_6$ -alkenyloxy,  $C_3$ - $C_6$ -alkinyloxy, benzyloxy,  $C_1$ - $C_7$ -alkanoyloxy,  $C_2$ - $C_7$ -alkoxycarbonyloxy,  $C_1$ - $C_6$ -alkylthio,  $C_3$ - $C_6$ -alkenylthio,  $C_3$ - $C_6$ -alkinylthio,  $C_3$ - $C_8$ -cycloalkyloxy,  $C_3$ - $C_8$ -cycloalkylthio,  $C_2$ - $C_7$ -alkoxycarbonyl, aminocarbonyl,  $C_2$ - $C_7$ -alkylaminocarbonyl,  $C_3$ - $C_{13}$ -dialkylaminocarbonyl, carboxy, phenyl, phenoxy, phenylthio, pyridyloxy, pyridylthio, and  $NR^5R^6$ , wherein

R<sup>5</sup> and R<sup>6</sup> are selected independently of each other from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, benzyl and phenyl;

R<sup>2</sup> is selected from the group consisting of hydrogen, halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy, benzyloxy and C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy;

R<sup>3</sup> is selected from the group consisting of hydrogen, halogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl and C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl;

R<sup>4</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy and benzyloxy;

k is 0 or 1,

A is selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylene,

a substituted C<sub>1</sub>-C<sub>6</sub>-alkylene which is substituted one to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, or fluorine, ~~or phenyl,~~

C<sub>2</sub>-C<sub>6</sub>-alkylene, in which a methylene unit is isosterically replaced by O, S, NR<sup>9</sup>, CO, SO or SO<sub>2</sub>, wherein, with the exception of CO, the isosteric substitution is not adjacent to the amide group and R<sup>9</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>1</sub>-C<sub>6</sub>-acyl and C<sub>1</sub>-C<sub>6</sub>-alkanesulfonyl,

~~1,2-cyclopropylene,~~

C<sub>2</sub>-C<sub>6</sub>-alkenylene,

a substituted C<sub>2</sub>-C<sub>6</sub>-alkenylene which is substituted once to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, fluorine, or cyano-~~or phenyl~~,

C<sub>4</sub>-C<sub>6</sub>-alkadienylene,

a substituted C<sub>4</sub>-C<sub>6</sub>-alkadienylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, or cyano-~~or phenyl~~;

1,3,5-hexatrienylene,

a 1,3,5-hexatrienylene which is substituted by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, or cyano-~~or phenyl~~, and

ethinylene,

D is selected from the group consisting of C<sub>2</sub>-C<sub>10</sub>-alkylene,

a substituted C<sub>2</sub>-C<sub>10</sub>-alkylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

C<sub>4</sub>-C<sub>10</sub>-alkenylene,

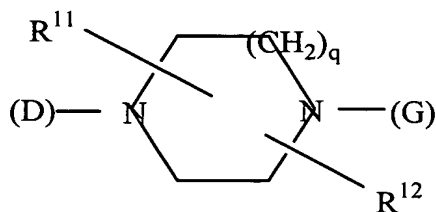
a substituted C<sub>4</sub>-C<sub>10</sub>-alkenylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

C<sub>4</sub>-C<sub>10</sub>-alkinylene,

a substituted C<sub>4</sub>-C<sub>10</sub>-alkinylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy; and

C<sub>2</sub>-C<sub>10</sub>-alkylene, C<sub>4</sub>-C<sub>10</sub>-alkenylene or C<sub>4</sub>-C<sub>10</sub>-alkynylene, in which one to three methylene units are isosterically replaced by O, S, NR<sup>10</sup>, CO, SO, or SO<sub>2</sub>, wherein R<sup>10</sup> has the same meaning as R<sup>9</sup>, but is selected independently thereof;

E is

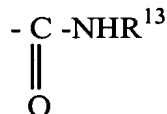


wherein

q is ~~1, 2, or 3~~;

R<sup>11</sup> is selected from the group consisting of hydrogen C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, hydroxymethyl, carboxy, or C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl,

R<sup>12</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl and an oxo group adjacent to a nitrogen atom, wherein G is



R<sup>13</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkynyl, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl,

saturated or unsaturated four to eight-membered heterocycles which contain one or two hetero-atoms selected

from the group consisting of N, S and O,

benzyl, phenyl,

monocyclic aromatic five or six-membered heterocycles,

monocyclic aromatic five or six-membered heterocycles which contain one to three hetero-atoms selected from the group consisting of N, S and O where the heter-atoms and are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O and the linkage can occur either over an aromatic ring or a hydrated ring and either directly or over a methylene group.

40. (Currently amended) The pyridylalkane, pyridylalkene and pyridylalkine carboxamides of formula (I) of claim 2 wherein aromatic ring systems in the substituents R<sup>1</sup>, R<sup>2</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, and R<sup>16</sup>, ~~Ar<sup>1</sup> and Ar<sup>2</sup>~~ and/or in the ring system -NR<sup>13</sup>R<sup>15</sup> may be substituted independently from each other by one to three of the same or different groups selected from the group consisting of halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl, phenyl, benzyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy

entirely or partially substituted by fluorine, benzyloxy, phenoxy, mercapto, C<sub>1</sub>-C<sub>6</sub>-alkylthio, carboxy, C<sub>2</sub>-C<sub>7</sub>-carboxyalkyl, C<sub>2</sub>-C<sub>7</sub>-carboxyalkenyl, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, benzyloxycarbonyl, nitro, amino, mono-C<sub>1</sub>-C<sub>6</sub>-alkylamino, di-(C<sub>1</sub>-C<sub>6</sub>-alkyl)-amino and, methylene dioxide for two adjacent residues on the aromatic ring, and wherein

alkyl- alkenyl- and cycloalkyl residues in the groups G<sup>1</sup>, ~~G<sup>2</sup>~~, ~~and G<sup>3</sup>~~ are substituted by one or two of the same or different groups which are selected from the group consisting of hydroxy, carboxy, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, benzyloxycarbonyl, amino, mono-C<sub>1</sub>-C<sub>6</sub>-alkylamino and di-(C<sub>1</sub>-C<sub>6</sub>-alkyl-amino), their cis- and trans-isomers E- and Z-isomers, diastereomers and other isomers as well as their racemic or non-racemic mixtures and the corresponding endo- and exo-isomers when the ring system E is bicyclic, their tautomers; their acid addition salts and their hydrates and solvates.

41. (Currently amended) The compound of formula (I) of claim 3 wherein aromatic ring systems in the substituents R<sup>1</sup>, R<sup>2</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, and R<sup>16</sup>, ~~Ar<sup>1</sup> and Ar<sup>2</sup>~~ and/or in the ring system -NR<sup>13</sup>R<sup>15</sup> may be substituted independently from each other by one to three of the same or different groups selected from the group consisting of halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl, phenyl, benzyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy entirely or partially substituted by fluorine, benzyloxy, phenoxy, mercapto, C<sub>1</sub>-C<sub>6</sub>-alkylthio, carboxy, C<sub>2</sub>-C<sub>7</sub>-carboxyalkyl, C<sub>2</sub>-C<sub>7</sub>-carboxyalkenyl, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, benzyloxycarbonyl, nitro, amino, mono-C<sub>1</sub>-C<sub>6</sub>-alkylamino, di-(C<sub>1</sub>-C<sub>6</sub>-alkyl)-amino and, methylene dioxide for two adjacent residues on the aromatic ring, and wherein

alkyl- alkenyl- and cycloalkyl residues in ~~the groups~~ G<sup>1</sup>,

~~G<sup>2</sup>~~, ~~and G<sup>3</sup>~~ are substituted by one or two of the same or different groups which are selected from the group consisting of hydroxy, carboxy, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, benzyloxycarbonyl, amino, mono-C<sub>1</sub>-C<sub>6</sub>-alkylamino and di-(C<sub>1</sub>-C<sub>6</sub>-alkyl-amino).

42. (Currently amended) The pharmaceutical composition of claim 12 aromatic ring systems in the substituents R<sup>1</sup>, R<sup>2</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, and R<sup>16</sup>, ~~Ar<sup>1</sup> and Ar<sup>2</sup>~~ and/or in the ring system -NR<sup>13</sup>R<sup>15</sup> may be substituted independently from each other by one to three of the same or different groups selected from the group consisting of halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl, phenyl, benzyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy entirely or partially substituted by fluorine, benzyloxy, phenoxy, mercapto, C<sub>1</sub>-C<sub>6</sub>-alkylthio, carboxy, C<sub>2</sub>-C<sub>7</sub>-carboxyalkyl, C<sub>2</sub>-C<sub>7</sub>-carboxyalkenyl, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, benzyloxycarbonyl, nitro, amino, mono-C<sub>1</sub>-C<sub>6</sub>-alkylamino, di-(C<sub>1</sub>-C<sub>6</sub>-alkyl)-amino and, methylene dioxide for two adjacent residues on the aromatic ring, and wherein

alkyl- alkenyl- and cycloalkyl residues in ~~the groups G<sup>1</sup>, G<sup>2</sup>, and G<sup>3</sup>~~ are substituted by one or two of the same or different groups which are selected from the group consisting of hydroxy, carboxy, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, benzyloxycarbonyl, amino, mono-C<sub>1</sub>-C<sub>6</sub>-alkylamino and di-(C<sub>1</sub>-C<sub>6</sub>-alkyl-amino).

43. (Currently amended) The pharmaceutical composition of claim 32 aromatic ring systems in the substituents R<sup>1</sup>, R<sup>2</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, and R<sup>16</sup>, ~~Ar<sup>1</sup> and Ar<sup>2</sup>~~ and/or in the ring system -NR<sup>13</sup>R<sup>15</sup> may be substituted independently from each other by one to three of the same or different groups selected from the group consisting of halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl, phenyl, benzyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy entirely or

partially substituted by fluorine, benzyloxy, phenoxy, mercapto, C<sub>1</sub>-C<sub>6</sub>-alkylthio, carboxy, C<sub>2</sub>-C<sub>7</sub>-carboxyalkyl, C<sub>2</sub>-C<sub>7</sub>-carboxyalkenyl, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, benzyloxycarbonyl, nitro, amino, mono-C<sub>1</sub>-C<sub>6</sub>-alkylamino, di-(C<sub>1</sub>-C<sub>6</sub>-alkyl)-amino and, methylene dioxide for two adjacent residues on the aromatic ring, and wherein

alkyl- alkenyl- and cycloalkyl residues in the groups G<sup>1</sup>, G<sup>2</sup>, and G<sup>3</sup> are substituted by one or two of the same or different groups which are selected from the group consisting of hydroxy, carboxy, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, benzyloxycarbonyl, amino, mono-C<sub>1</sub>-C<sub>6</sub>-alkylamino and di-(C<sub>1</sub>-C<sub>6</sub>-alkyl-amino).

44. (Currently amended) The method of claim 33 wherein aromatic ring systems in the substituents R<sup>1</sup>, R<sup>2</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, and R<sup>16</sup>, ~~Ar<sup>1</sup> and Ar<sup>2</sup>~~ and/or in the ring system - NR<sup>13</sup>R<sup>15</sup> may be substituted independently from each other by one to three of the same or different groups selected from the group consisting of halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl, phenyl, benzyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy entirely or partially substituted by fluorine, benzyloxy, phenoxy, mercapto, C<sub>1</sub>-C<sub>6</sub>-alkylthio, carboxy, C<sub>2</sub>-C<sub>7</sub>-carboxyalkyl, C<sub>2</sub>-C<sub>7</sub>-carboxyalkenyl, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, benzyloxycarbonyl, nitro, amino, mono-C<sub>1</sub>-C<sub>6</sub>-alkylamino, di-(C<sub>1</sub>-C<sub>6</sub>-alkyl)-amino and, methylene dioxide for two adjacent residues on the aromatic ring, and wherein

alkyl- alkenyl- and cycloalkyl residues in ~~the groups~~ G<sup>1</sup>, ~~G<sup>2</sup>, and G<sup>3</sup>~~ are substituted by one or two of the same or different groups which are selected from the group consisting of hydroxy, carboxy, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, benzyloxycarbonyl, amino, mono-C<sub>1</sub>-C<sub>6</sub>-alkylamino and di-(C<sub>1</sub>-C<sub>6</sub>-alkyl-amino).

45. (Currently amended) The method of claim 34 wherein



aromatic ring systems in the substituents R<sup>1</sup>, R<sup>2</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, and R<sup>16</sup>, ~~Ar<sup>1</sup> and Ar<sup>2</sup>~~ and/or in the ring system - NR<sup>13</sup>R<sup>15</sup> may be substituted independently from each other by one to three of the same or different groups selected from the group consisting of halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl, phenyl, benzyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy entirely or partially substituted by fluorine, benzyloxy, phenoxy, mercapto, C<sub>1</sub>-C<sub>6</sub>-alkylthio, carboxy, C<sub>2</sub>-C<sub>7</sub>-carboxyalkyl, C<sub>2</sub>-C<sub>7</sub>-carboxyalkenyl, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, benzyloxycarbonyl, nitro, amino, mono-C<sub>1</sub>-C<sub>6</sub>-alkylamino, di-(C<sub>1</sub>-C<sub>6</sub>-alkyl)-amino and, methylene dioxide for two adjacent residues on the aromatic ring, and wherein

alkyl- alkenyl- and cycloalkyl residues in ~~the groups G<sup>1</sup>, G<sup>2</sup>, and G<sup>3</sup>~~ are substituted by one or two of the same or different groups which are selected from the group consisting of hydroxy, carboxy, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, benzyloxycarbonyl, amino, mono-C<sub>1</sub>-C<sub>6</sub>-alkylamino and di-(C<sub>1</sub>-C<sub>6</sub>-alkyl-amino).

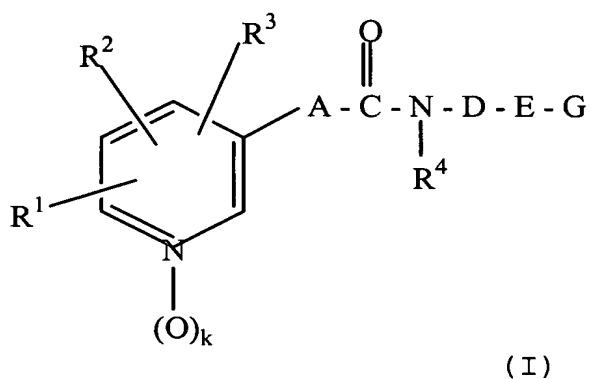
46. (Previously presented) The pharmaceutical composition of claim 24 wherein a dosage unit for a single administration contains about 0.001 to about 2.0 mg active ingredient.

47. (Previously presented) The pharmaceutical composition of claim 24 wherein a dosage unit for a single administration contains about 0.01 to about 2.0 mg active ingredient.

48. (Previously presented) The pharmaceutical composition of claim 24 wherein a dosage unit for a single administration contains about 0.1, 1, 2, 5, 10, 20, 25, 30, 50, 100, 200, 300, 500, 600, 800, 1000, 2000, 3000, 4000 to

about 5000 mg active ingredient.

49. (Currently amended) A method of inhibiting colon, lung, liver and leukemia tumor cell growth in a human or animal body comprising administering to the human or animal body in need thereof an amount of a pharmaceutical composition effective for inhibiting colon, lung, liver and leukemia tumor cell growth, wherein the pharmaceutical composition includes a compound of general formula (I)



wherein:

R<sup>1</sup> is selected from the group consisting of hydrogen, halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>2</sub>-C<sub>6</sub>-alkinyl, trifluoromethyl, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl, C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>3</sub>-C<sub>6</sub>-alkenyloxy, C<sub>3</sub>-C<sub>6</sub>-alkinyloxy, benzyloxy, C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyloxy, C<sub>1</sub>-C<sub>6</sub>-alkylthio, C<sub>3</sub>-C<sub>6</sub>-alkenylthio, C<sub>3</sub>-C<sub>6</sub>-alkinylthio, C<sub>3</sub>-C<sub>8</sub>-cycloalkyloxy, C<sub>3</sub>-C<sub>8</sub>-cycloalkylthio, C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, aminocarbonyl, C<sub>2</sub>-C<sub>7</sub>-alkylaminocarbonyl, C<sub>3</sub>-C<sub>13</sub>-dialkylaminocarbonyl, carboxy, phenyl, phenoxy, phenylthio, pyridyloxy, pyridylthio, and NR<sup>5</sup>R<sup>6</sup>, wherein

R<sup>5</sup> and R<sup>6</sup> are selected independently of each other from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, benzyl and phenyl;

R<sup>2</sup> is selected from the group consisting of hydrogen, halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy, benzyloxy and C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy;

R<sup>3</sup> is selected from the group consisting of hydrogen, halogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl and C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl;

R<sup>4</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy and benzyloxy;

k is 0 or 1,

A is selected from the group consisting of  
C<sub>1</sub>-C<sub>6</sub>-alkylene,

a substituted C<sub>1</sub>-C<sub>6</sub>-alkylene which is substituted one to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, or fluorine, ~~or phenyl~~,

C<sub>2</sub>-C<sub>6</sub>-alkylene, in which a methylene unit is isosterically replaced by O, S, NR<sup>9</sup>, CO, SO or SO<sub>2</sub>, wherein, with the exception of CO, the isosteric substitution is not adjacent to the amide group and R<sup>9</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>1</sub>-C<sub>6</sub>-acyl and C<sub>1</sub>-C<sub>6</sub>-alkanesulfonyl,

~~1,2-cyclopropylene,~~

C<sub>2</sub>-C<sub>6</sub>-alkenylene,

a substituted C<sub>2</sub>-C<sub>6</sub>-alkenylene which is substituted once to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, fluorine,

or cyano ~~or phenyl~~,

C<sub>4</sub>-C<sub>6</sub>-alkadienylene,

a substituted C<sub>4</sub>-C<sub>6</sub>-alkadienylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, or cyano, ~~or phenyl~~,

1,3,5-hexatrienylene,

a 1,3,5-hexatrienylene which is substituted by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, or cyano ~~or phenyl~~, and

ethinylene,

D is selected from the group consisting of C<sub>2</sub>-C<sub>10</sub>-alkylene,

a substituted C<sub>2</sub>-C<sub>10</sub>-alkylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

C<sub>4</sub>-C<sub>10</sub>-alkenylene,

a substituted C<sub>4</sub>-C<sub>10</sub>-alkenylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

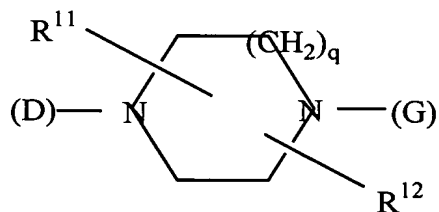
C<sub>4</sub>-C<sub>10</sub>-alkinylene,

a substituted C<sub>4</sub>-C<sub>10</sub>-alkinylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy; and

C<sub>2</sub>-C<sub>10</sub>-alkylene, C<sub>4</sub>-C<sub>10</sub>-alkenylene or C<sub>4</sub>-C<sub>10</sub>-alkinylene, in which one to three methylene units are isosterically replaced by O, S, NR<sup>10</sup>, CO, SO, or SO<sub>2</sub>, wherein R<sup>10</sup> has the same meaning

as R<sup>9</sup>, but is selected independently thereof;

E is



wherein

~~q is 1, 2, or 3;~~

R<sup>11</sup> is selected from the group consisting of hydrogen C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, hydroxymethyl, carboxy, or C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl,

R<sup>12</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl and an oxo group adjacent to a nitrogen atom,

~~G is selected from the group consisting of G1, G2, G3, G4, and G5, wherein~~

G<sup>1</sup> is  $-(CH_2)_r-(CR^{14}R^{15})_s-R^{13}$

r is 0 to 3,

s is 0 or 1,

R<sup>13</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl,

saturated or unsaturated four to eight-membered heterocycles which contain one or two hetero-atoms selected from the group consisting of N, S and O,

benzyl, phenyl,

monocyclic aromatic five or six-membered heterocycles,

monocyclic aromatic five or six-membered heterocycles which contain one to three hetero-atoms selected from the group consisting of N, S and O where the heter-atoms and are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O and the linkage can occur either over an aromatic ring or a hydrogenated ring and either directly or over a methylene group,

R<sup>14</sup> has the same meaning as R<sup>13</sup>, but is selected independently thereof;

R<sup>15</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, benzyl, and phenyl,

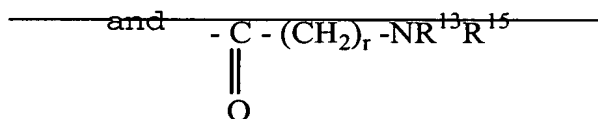
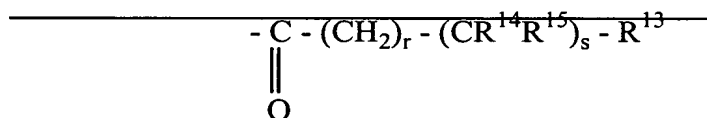
monocyclic aromatic five or six-member heterocycles,

which contain one to three hetero-atoms selected from the group consisting of N, S and O and wherein the hetero-atoms are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O and the linkage occurs either over an aromatic ring or a hydrated ring and either directly or over a methylene group,

~~G<sup>2</sup> is selected from the group consisting of~~



~~wherein r, s and the substituents R<sup>13</sup> to R<sup>15</sup> can have the above meaning, or the group -NR<sup>13</sup>R<sup>15</sup>,~~

~~wherein -NR<sup>13</sup>R<sup>15</sup> is a nitrogen-containing heterocycle bound over the nitrogen atom selected from the group consisting of~~

~~—saturated or unsaturated monocyclic, four to eight-membered nitrogen-containing heterocycles,—~~

~~—saturated or unsaturated monocyclic, four to eight-membered nitrogen-containing heterocycles which, aside from the essential nitrogen atom, contain one or two further hetero-atoms selected from the group consisting of N, S and O,—~~

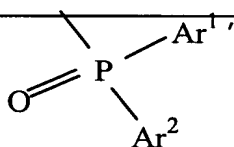
~~—saturated or unsaturated bi- or tricyclic anellated or bridged nitrogen-containing heterocycles with 8 to 16 ring atoms,—~~

~~—saturated or unsaturated bi- or tricyclic anellated or bridged nitrogen-containing heterocycles with 8 to 16 ring atoms which aside from the essential nitrogen atom, contain one or two further hetro-atoms that are selected from N, S and O,—~~

~~—G<sup>3</sup> is SO<sub>2</sub>-(CH<sub>2</sub>)<sub>r</sub>-R<sup>13</sup>-(G3)—~~

~~wherein r and R<sup>13</sup> have the above meanings,—~~

~~—G<sup>4</sup> is—~~



~~—wherein~~

~~—Ar<sup>1</sup> and Ar<sup>2</sup> are selected independently from each other from phenyl, pyridyl or naphthyl,—~~

~~—G<sup>5</sup> is COR<sup>16</sup>~~



~~—R<sup>16</sup> is selected from the group consisting of  
trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>3</sub>-C<sub>6</sub> alkenyloxy, and benzyloxy.~~